AMERICAN JOURNAL OF OPHTHALMOLOGY

Volume 11 January, 1928 Number 1

RETINITIS WITH MASSIVE EXUDATES

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The case here reported was that of a boy of 9 years recently found to have poor vision. The cause is unknown. The retinitis may be checked in some cases, but the function of the retina cannot be restored.

The white spots that appear in the retina as the result of kidney, heart, or vascular disease, diabetes, or syphilis are seen so frequently that even an ophthalmologist of little experience can readily make the diagnosis. Those due to tuberculosis are rarely seen and are not always characteristic, so that their diagnosis is made on a consideration of the associated history rather than on the retinal picture. But there is a retinitis seldom seen even by oculists of large experience but which once observed and studied can never be mistaken for anything else.

On December 27, 1926, an Italian father brought his nine year old son to my office. The school doctor had told him that he had poor vision in the right eye, to go to any eye doctor and be examined for glasses. That was practically the entire history. He had never had sore eyes, did not know his vision was defective, and beyond one or two of the usual children's ailments he had never been sick.

The boy was a well nourished lad. He had recently made a slight gain in weight. His only complaint was of a slightly swollen cervical gland on the right side.

Right Eye: Vision of large objects. Can see fingers at one foot but counts them inaccurately. There is no external evidence of any pathology. The pupillary reactions are normal and the media are clear. The optic nerve is of good color, showing neither pallor nor congestion, and there is no swelling of the disc.

Beginning at the upper limit of the nervehead and extending over to the temporal region of the retina, there is a yellowish white, waxy area, which occupies almost the entire lower and outer quadrant of the fundus. This area is almost solid white in color except for a tongue of greenish yellow pigmentation extending into the region of white, a little below and to the temporal side of the disc. The retinal vessels cross over the white field and are not covered by the exudate, if such it is.

Above the field just described are numerous "flocculent or mutton-fat patches, extending upward as far as the eye can see and resembling the deposits of an albuminuric retinitis. These flocculent patches of white are also in evidence below the main area, although to a less degree.

In the region of the inferior temporal artery the retina appears to be detached, for the vessels here can be seen with a plus 5.00 D. lens as compared with a plus 1.00 D. lens in the upper and central fields. Between the temporal side of the disc and the beginning of the white area is a narrow band of choroidal pigment; and, if the patient turns his head to the extreme right, there are a few punctate spots that look like minute capillary aneurisms or dilatations.

A physical examination of the boy, kindly made for me by Alvah Miller, gave no clue as to the etiology of this exudate, there being neither sugar nor albumen in the urine, the Wassermann negative, the lungs clear, and no manifest focus of infection being present.

It was easier for the writer to say what the disease was not rather than what it was, but on seeing the case A. C. Snell named it "angiomatosis retinae or von Hippel's disease," whereas John Gipner, to whom the writer is indebted for the very careful painting of the ophthalmoscopic picture, called it "retinitis exudativa or Coats' disease." Snell had seen one other case in his own practice and Gipner one or two at the Mayo Clinic.

In 1908, in the Royal London Hospital Reports, Coats described a group of cases characterized by the presence in some part of the fundus of an extensive mass of exudation, and in some cases found associated with this a peculiar form of vascular disease, with fusiform and globular expansions, kinks, loops, and glomeruli. In the disease as described by Coats, the white exudate is the prominent feature of the retinal picture. When the blood vessel changes are the outstanding characteristic, the disease comes under the description of von Hippel's retinitis, or angiomatosis retinae. In my case the blood vessel changes are confined to a few small dots at the extreme temporal border, while the exudate is by far the more prominent feature.

Fuchs states that these masses of exudate are usually elevated above the level of the retina and may project like a veritable tumor. This may explain the apparent pushing forward of the retinal vessels in the lower part of the field of this Italian boy's eye, as the picture is not typical of ordinary detachment.

In meeting for the first time an unusual condition such as this peculiar retinitis, the ophthalmic practitioner, in his service to the patient and out of scientific interest in his specialty, will naturally demand from the literature of the subject an answer to these questions:

1. What is the cause underlying this retinitis?
2. Can the condition be cured?
3. What is the probable outcome?
4. Are von Hippel's retinitis and that of Coats one and the same disease?
5. What does the microscope show?
6. How frequently does such a retinitis occur?

Etiology: Coats' conclusion is that the most careful physical examination fails to discover any probable etiology. The affection usually occurs in young males in apparently good health, although Snell's case which I had the opportunity of seeing was in a young girl.

Szmaj reports three cases supposed to be tuberculous, and Dodd reports the case of a sixteen year old girl with retinal exudates, in whom intradermal tuberculin gave a strongly positive reaction and tuberculin treatment caused subsidence of the retinitis, leaving in its place white bands. Davis reports the case of a ten year old boy who improved under tuberculin. We have tried tuberculin on my patient without any effect.

Sattler and Leber think that the cause is of an embolic toxic nature.

Carsten, apparently favoring the hemorrhagic theory, reports the cases of two out of three young men whose coagulation time was normal and who yet showed some improvement following the use of an antihemorrhagic compound known in Munich by the name of "Clauden".

Coats found microscopic evidence favoring hemorrhage as the cause of the exudates, but against this as a primary cause must be set, so he says, the youth of the patients and the fact that the disease is usually unilateral.

Can the disease be cured? If that means restoration of sight, the answer is "no". The condition usually goes on to detachment of the retina, secondary glaucoma, and total blindness. There have been isolated cases in which either with or in spite of medication such as described above, the process was temporarily or permanently arrested. Fortunately, in the exudative form the condition is usually confined to one eye.

Is *Retinitis exudativa* or *Coats' retinitis* the same disease as *Angiomatosis retinae* or von Hippel's disease? In his original article Coats speaks of retinal angiomatosis as an allied form or a variety of the same form as retinitis exudativa. But he concludes by saying

that the few pathological examinations that have been made do not altogether support the theory that these are one and the same disease, and that in the meantime therefore it is better to classify them separately. Fuchs regards them as variations of the same disease, whereas Swanzy lists them as two separate conditions.

Pathological examination: Coats found that the white mass was due to a disintegrating hemorrhage seen through a retina which was thickened and infiltrated with swollen leucocytes. The hemorrhage was connected with the outer strata of the retina and was therefore derived from the capillaries of the outer reticular layer. It had broken into the subretinal space, and at its periphery slow organization was taking place.

According to Swanzy, the most constant microscopic lesion is a fibrous tissue mass between the retina and the choroid, with evidences of degenerative changes. In many cases the retinal vessels show various forms of disease.

Frequency: The few authorities that list this disease classify it as rare. According to A. C. Snell, there is in the literature, including his case shortly to be reported and that of my patient, a total of about forty-two cases. While granting that a number more have escaped either recognition or publication, the total number of such cases must still be very small.

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RETINITIS PUNCTATA ALBESCENS

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CHICAGO

Two patients, members of a family described seventeen years earlier by Lauber, were presented. Good vision was still retained, with hemeralopia. The fundus appearance remained the same. Read before the Chicago Ophthalmological Society, May 23, 1927.

The incidence of retinitis punctata albescens is so rare that I feel each case that is discovered should be reported. In American literature about fifteen cases were recorded during the past twenty-five years. The family presented tonight was described by Lauber[1] of Vienna, and it is believed that a comparison of the findings in 1910 with those of the present will be instructive.

The condition now known as retinitis punctata albescens was first described by Mooren in 1882. There is a rather definite symptomatology and fundus picture, which may be noted as follows: Consanguinity is mentioned in a large number of the reports. Hemeralopia is a most constant symptom and is found in two thirds of the cases. (Ball[2]) Impairment of vision occurs in varying degrees from normal to almost complete blindness.

The perimetric records reveal normal fields in the nonprogressive type, whereas in the progressive type there are contracted fields in some and in others a ring scotoma. The color fields are often reduced, especially for blue. In taking the fields where the disease is suspected it is essential to have good illumination, since the vision is relatively reduced in a dim light.

Ophthalmoscopically we find the characteristic dots; round as a rule, though many seem to be linear in shape; white or golden in color. Some of the linear dots are thought to correspond to several small ones which have coalesced, although there is no evidence in support of this theory. The diameter of the largest dots does not exceed the width of the larger retinal vessels. The condition is bilateral, congenital, and familial, yet may not affect all the children of the same parents. The dots are located beneath the retinal vessels in the lamina vitrea, and are scattered throughout the fundus about the disc, and especially in the peripheral areas. The macula is not so frequently involved, but in comparing the fundi of the brother and sister here presented, it will be seen that in the brother the macular area is thickly occupied by the little white dots, while only a few are seen about the macula of the sister. Some reports give findings of dark pigment spots accompanying the white spots, particularly along the course of the vessels in the periphery.

The affection is supposed to be related to retinitis pigmentosa (Gaynet and Fuchs), but no microscopic examination has been made of such an eye. One member of a family may show retinitis pigmentosa while another presents the punctate condition. (Galezowski[3])

Cohen[4] records a negro family of six children in which a boy of 13 and a girl of 6 years were afflicted, while the other four children escaped. The parents were normal. Hemeralopia was the only complaint. Newman reports five generations of night blindness.

Consanguinity is not always a factor, as mentioned in H. Gradle's[5] discussion before the International Congress at Lisbon. The predominant symptom in his case was headache, which was relieved by appropriate glasses.

Improvement of vision due to medication has been claimed by two writers. Pascheff[6], in one of his cases, effected considerable improvement by mercurial treatment. The hemeralopia improved and the number of white spots was diminished.

Derkac and Botteri[7] used arsenic and strychnine with beneficial effects in the treatment of a woman twenty-five years of age, who had complained of poor vision for one year. About each

disc was a ring, interrupted only on the nasal side, of yellowish white glassy and opaque spots behind the blood vessels. The fields were contracted and the light sense reduced. The color sense remained intact.

Retinitis punctata albescens should be differentiated from Tay's choroiditis, which is limited to the central region of the fundus and often causes no defect of vision. The latter never gives rise to night blindness or to contraction of the fields, nor does it show tendency to affect more than one member of the family.

Gunn's dots (Crick dots) would rarely be confused with this disease, as they are very minute, yellowish white, shining dots located about the disc and to the nasal side. In distribution these dots are remarkably equidistant from one another. They are situated anteriorly to the largest retinal vessels, each being less than one eighth of the diameter of a large vessel. While they are assumed to have no pathological significance, Paton[8] says that in many cases of intolerance to glare without obvious cause, Gunn's dots are present.

Drusen are usually seen in the elderly. However, Scarlett has recently described a case in a boy of nine years. The nodules are as a rule situated at the border of the disc, and at times in clumps resembling grapes in other parts of the fundus. Apparently they arise from the lamina vitrea and they are interpreted as hyaline degeneration. Vision is not noticeably affected.

Nettleship[9], has described a somewhat similar affection in which minute white round spots were scattered over the fundus and were associated with pigment changes at the periphery and with night blindness. These are known as Nettleship's dots. They are stationary or slowly progressive. Some authors have regarded the condition as a variety of retinitis pigmentosa, but this view is generally considered erroneous.

Lauber has endeavored to classify the disease under two types:

First: Stationary, congenital, high degree of hemeralopia, but otherwise normal. This he calls "fundus albipunctatus cum hemeralopia congenitiva."

Second: Progressive, congenital, pigment proliferation, atrophy of the choroid, retinitic optic atrophy. Reduction in visual acuity and narrowing of the fields. This type he calls "retinitis punctata albescens."

Both types are familial; both generally show consanguinity of ancestors.

The family history of the patients presented tonight is taken from the report by Lauber, who had an opportunity to study the entire family. The ages given are those recorded in 1910. The father and maternal grandmother were cousins. Both parents were of Jewish extraction; both enjoyed good vision. The children were as follows: S. G., male, aged 28 years—Complained of hemeralopia; J. G., male, aged 25 years—Normal; E. G., male, aged 19 years—Complained of hemeralopia; E. G., female, aged 15 years—Mentally and physically inferior, hemeralopia; F. G., female, aged 9 years.—Normal; B. G., female, aged 5 years—Complained of hemeralopia.

It is noteworthy that two of the males were afflicted with hemeralopia and one was normal. The same ratio held for the females. All the children were physically and mentally well developed, except the oldest daughter. The first and third brother had similar symptoms and findings. Bright days seemed to aggravate the condition, and after being in brilliant illumination it took considerable time to become accustomed to dim light.

The oldest brother showed hemeralopia, no color anomalies, and good vision. In the periphery of the fundus were numerous elongated dots with meridional axes, their position seeming to depend on the choroidal vessels. They appeared to be crowded into the interspaces between the vessels, and were always beneath the retinal vessels.

The third brother had a normal field for white in normal light. In reduced illumination the field was greatly contracted, especially for blue. The fundus was similar to that of the older brother.

The first daughter was physically and mentally defective. She had had an epileptic convulsion when two years of age, but no recurrence since. At four years of age she had had scarlet fever complicated by nephritis.

The third daughter had blond hair and gray irides, in distinction from all other members of the family, who had black hair and brown irides. She had hemeralopia, with vision of 20/20 in the right eye, and 20/30 in the left eye. The color sense was normal; she was too young to measure the fields. The eyegrounds were decidedly lighter than those of the other members of the family. Only a few spots, similar to the others in the periphery, were seen about the disc and macula.

It is an unusual opportunity we have in presenting to this society two members of the family described by Lauber in 1910. The brother, E. G., now 38 years of age, has good vision, but is troubled with hemeralopia. The fields and color sense are normal. In reduced light the fields contract out of proportion to the diminution of light. Once, after a bright sunny day which he had

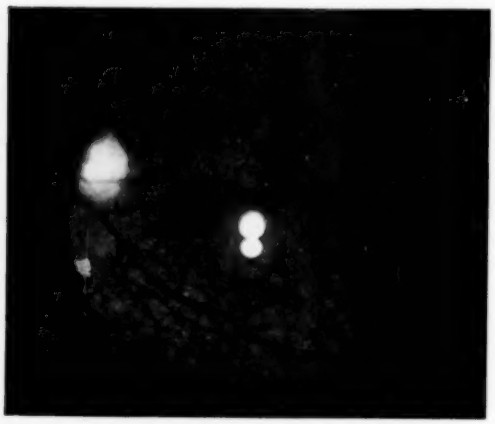

Fig. 1. Fundus of the brother showing prevalence of dots in the macular area, as well as throughout the periphery.

spent in the park, he became separated from his friends and experienced great difficulty in finding his way home. His vision is normal. The fundus is studded with little white dots throughout the periphery, about the disc, and to a considerable extent in the macula. The spots seen in the periphery are just as described by Lauber, being elongated, arranged meridionally, and seeming to lie between the choroidal vessels. There is no evidence of pigmentation. The blood Wassermann is negative.

The sister, B. G. now 22 years of age, is less affected by hemeralopia and there is also a variation in the degree of hemeralopia in the two eyes; that is, vision in a dim light is more reduced

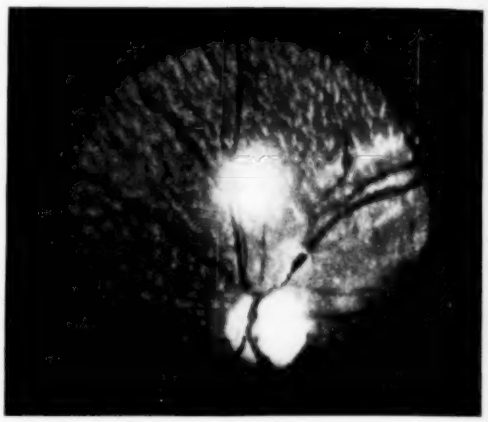

Fig. 2. Fundus of the sister, showing paucity of dots in the macular area; abundance near disc and above.

in the right eye than in the left. The visual acuity is normal. The fundus findings differ from those of the brother, in that but a few spots are found about the macula, but in other respects the fundus picture is the same. The fields are normal. The blood Wassermann is negative.

On comparison with the findings of seventeen years ago we are impressed with the fact that no fundus changes have taken place. It is now possible for us to make accurate photographic records, which Lauber was unable to do at that time. In his report he emphasized the fact that the youngest daughter had blond hair and gray irides. At present her hair is dark and the irides are brown, showing that she does not differ from the other members of the family. Therefore it is possible that some of the others were blond as children.

It is evident that the members of this family have the nonprogressive

type of the disease which Lauber was pleased to term "fundus albipunctatus cum hemeralopia congenitiva."

Remarks.—From a study of reports by various authors we are impressed with certain characteristics of this interesting disease.

First: Consanguinity plays an important rôle; Second: Hemeralopia is present in two thirds of the cases; Third: The condition is familial, congenital, and bilateral; Fourth: It may be progressive or nonprogressive; Fifth: Both white and negro races may be afflicted; Sixth: Medication may be indicated in certain cases.

30 North Michigan avenue.

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SCLERO-POST-IRIDECTOMY, A RATIONAL OPERATION IN GLAUCOMA

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By way of an incision through the sclera 2.5 millimeters above the limbus, the iris root is completely freed from adhesions over the pectinate ligament. After retroversion of the iris, and drawing it out posteriorly, by means of a hook, through the scleral wound, an ample iridectomy is performed. An illustrative case is described. Read at the annual meeting of the American Ophthalmological Society, Quebec, June 29 and 30, 1927.

It is recorded in the scripture that Joshua once commanded the sun to stand still, and it remained still for one day. It is recorded in history that King Canute, of the ancient Britons, with his throne brought to the seashore, commanded the flowing tide to recede. It did not. I shall refer to the analogy later.

Ever since Graefe made the accidental discovery that iridectomy was a means of combating glaucoma, the world of ophthalmology has practised his procedure. Graefe knew that it was empirical; his disciple, de Wecker, knew that there was something lacking; and it was not until Leber came along, and Weber and Knies, demonstrating the intraocular circulation, that any real explanation or justification of the procedure was forthcoming. We know today exactly as much concerning intraocular circulation as they knew. Perhaps the only exception is Park Lewis's demonstration of aqueous vitreous.

But considering only the significance of the generally accepted theory of drainage through the canal of Schlemm, I have an essentially new idea to convey to you. New, not because I have not already suggested it, but because most of you have not yet wished to listen to the murmurings of the inevitable trend.

It is unnecessary, in this company, to rehearse, or revamp, or recapitulate the pathology of the glaucomatous eye, as we know it today. If that idea of pathology is right, we have been applying the surgical remedy wrongly.

Yet, my friends, I do not deceive myself. Joshua (in other words Custom and Habit and Acceptance of What Is) commands the sun to stand still; and it does! I am the feeble Canute, commanding the tide to recede—and it doesn't!

But there is another and a better way of doing iridectomy for glaucoma than that which you have been taught, and which you practise.

The object, in these cases, is to release the iris base from its adhesions over the pectinate ligament and so open again the natural drainage through the canal of Schlemm. This can not be certainly accomplished by means of the old fashioned anterior iridectomy. By anterior iridectomy I mean entrance into the anterior chamber in front of the adherent iris base, and withdrawal and excision of a segment of the iris. This procedure can not and does not, save in occasional instances of tractional divulsion, remedy the pathological phenomenon.

In a thoughtful and able paper read before the American Ophthalmological Society in 1924, Frederick Tooke of Montreal stressed the importance, in glaucoma, of the structures about the filtration angle, viz. the pectinate ligament and the root of the iris. In 1923 (one year before), at a meeting of the Southern Medical Association, in Washington, D. C., I stated the sine qua non of glaucoma surgery as a recognition of the relations of the iris base, the pectinate ligament and the canal of Schlemm; and I cited operative cases covering some years previously.

In presenting to you, then, my method of dealing with these fundamental principles, it must be conceded that we leave out of consideration those cases of glaucoma with deep anterior chamber, which present another aspect of inadequate drainage, which are to be dealt with in another way, and which we can discuss at another time. I believe the incidence of these cases is greatly in the minority of all cases of glaucoma.

My predicate is that the iris base must be separated from its adhesions covering the pectinate ligament—assuming our present ideas of the pathology of glaucoma and the physiology of the eye to be correct.

I have no hesitation in saying, and I repeat for emphasis, that by the accepted method of anterior iridectomy (that is, incision into the anterior chamber and withdrawal, anteriorly, and excision of a segment of the iris) this result can not be and is not achieved, except in the occasional instances of divulsion before alluded to. Nevertheless, the operative desideratum can be won by the method I have devised and describe to you now as sclero-post-iridectomy.

My present procedure is to dissect the conjunctiva down to the limbus, just as in the first step of a trephine or Lagrange operation, the conjunctival incision being made 6 mm. above the limbus. Holding this flap with forceps, or the assistant holding it while the operator uses fixation forceps placed at one side of the cornea, the incision is made in the sclera with a small, very sharp, belly-edged scalpel approximately 2.5 mm. above the limbus, running horizontally, and about 3 or 3.5 mm. long. This is accomplished by making repeated strokes downward on the sclera. Knowing the approximate thickness of the sclera, and as it is easy to recognize the uveal tissue as soon as the sclera opens to it, there is no danger of going too deep, but as a matter of fact this would make no serious difference. Then a small angular iris repositor is gently insinuated through the scleral wound, between the sclera and the iris base. With forceps holding the conjunctival flap straight upward from the bulb, the point of the repositor is readily seen, through the cornea, entering the anterior chamber. The repositor is now worked gently from side to side as far as the limits of the scleral opening will permit, always pulling gently forward on the repositor, so as to make it hug closely to the posterior surface of the sclera and cornea. This assures separation of the iris from adhesions over the spaces of Fontana. The repositor can be rotated on the axis of its handle and the iris can be separated from the cornea for quite a little distance beyond the limitations of the scleral opening. If there is any reason to suppose that the iris has not been fully separated and the spaces of Fontana not fully freed from adhesions, as in the case of an atrophic and friable iris,

Fig. 1. Specially designed iris hook, being an ordinary blunt hook bent to angle of 30 degrees from shaft at distance of 8 mm. from tip, the hook being at inner aspect of angle. This permits easy insertion from above cornea, without interference by supraorbital ridge.

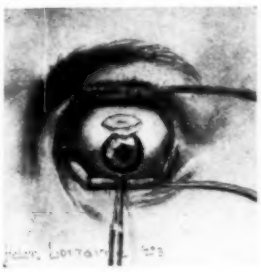

Fig. 2. Showing conjunctival flap turned down over cornea, and shorter scleral incision 2.5 mm. above corneal limbus.

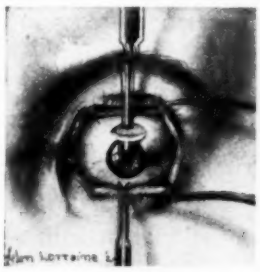

Fig. 3. Spatula entering anterior chamber through scleral incision, separating adherent iris from inner surface of sclera and cornea, thus uncovering pectinate ligament and Schlemm's canal.

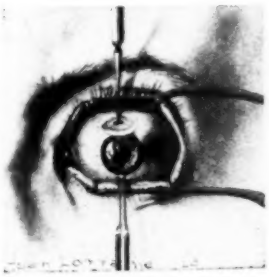

Fig. 4. Hook passed through scleral incision, between iris and lens, and engaging upper pupillary margin of iris.

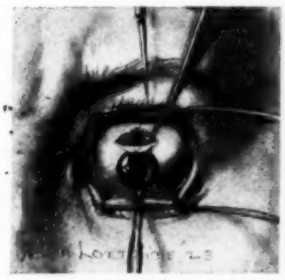

Fig. 5. Iris withdrawn on hook, and scissors in position to complete the subscleral iridectomy.

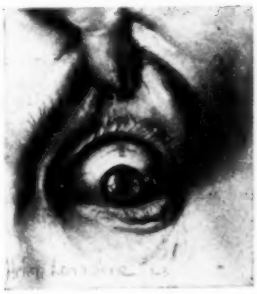

Fig. 6. Operation completed and conjunctiva drawn back into place and sutured over scleral incision.

then a small sharp ear curette can be inserted and the inner surface of the cornea and pectinate ligament can be gently curetted of any adherent iris tissue or exudates, thus assuring a reopening of the drainage canal. The latter procedure I think is seldom required.

Now comes the posterior iridectomy. It is very easy to make a nick in the uveal tissue seen through the scleral wound. This may be done either in the same manner as the scleral incision was made, or by puncture and upward cutting with a cataract knife. This done one finds it surprisingly simple and easy to pass a small angular blunt hook behind the iris, always hugging closely the posterior surface of the iris so as to avoid possible trauma to the lens capsule. As soon as the hook appears in the pupillary area it is easily hooked over the edge of the iris and the iris withdrawn straight upward through the scleral wound and excised. The operator will perhaps be surprised at the size of the bunch of iris tissue withdrawn in this way, comprising as it does considerably more iris than the ordinary anterior iridectomy. But the iris thus engaged must be withdrawn fully so as to include the base of the iris in the section, otherwise the full intention of the operation will fail of accomplishment. With experience one instinctively knows how far the iris tissue can be withdrawn before it gives way and tears. If it should do this, however, the operator can go back again and get what remains with perfect safety, of course. I do not attempt any toilet of the scleral wound, beyond removing blood clots or shreds with forceps. If a tag of iris remains incarcerated it makes no difference and in fact may possibly be an advantage, as with the much heralded operation of iridotasis. However my experience is that the iris almost always drops back into place, leaving a perfect coloboma. The conjunctival flap is then replaced, and I usually use a couple of sutures (taking them out on the fourth day). I instill a drop of atropine and insert into the conjunctival sac a liberal quantity of bichloride vaseline, 1–3500 (White's ointment is all right). I dress the eye on the second day, instilling atropine and a fresh supply of bichloride vaseline, and do not touch it again until the fourth day after operation, when I remove the conjunctival sutures.

It is not uncommon for the tension to be up (though below the original tension) for a few days, but it soon drops again to normal and stays there.

The operation above described is applicable in every form of glaucoma, acute or chronic, except that in those cases having a deep anterior chamber and due not to blockage of drainage, but to insufficient normal caliber of the drainage canals, coupled with hypersecretion from the ciliary body, I believe nothing short of an operation providing a filtrating cicatrix can possibly be of any avail.

Vitreous decompression can be easily accomplished in connection with this operation, by the method described by myself in detail in the paper referred to above, read at the Washington meeting of the Southern Medical Association in 1923. I have done it several times with satisfactory results. It is a valuable procedure in certain cases.

The usefulness of this method of iridectomy (sclero-post-iridectomy) was well demonstrated in a recent case, briefly as follows:

Case report.—A woman aged thirty years was led into my office by her husband, complaining that she was almost blind. It could be seen at a glance that the left eye was totally blind and hopeless. The right eye showed on examination indisputable evidence of an old uveitis. The whole cornea was slightly steamy, and leucomatous in the lower third. The anterior chamber was shallow. Pupillary exudates and posterior synechiae made an occlusio and almost a seclusio pupillae. In the lower third the result of an old hypopyon was shown in anterior synechiae. The iris was atrophic and spongy looking in spots, and was evidently very friable. Only a faint fundus reflex could be elicited with the ophthalmoscope. Vision equalled counting fingers at two feet. The tension (Schiötz) was eighty mm. The vision

was too poor to get the field, but undoubtedly this was contracted. It was plainly a case of secondary chronic glaucoma.

An ordinary anterior iridectomy would have seemed to offer little hope of success with such a disorganized and adherent iris. Trephining or a Lagrange, without iridectomy, would do little good, for an optical coloboma was needed. Sclero-post-iridectomy was done, separating the iris from its adhesions to the lens capsule; and the inner surface of the cornea, in the pectinate ligament area, was gently curetted free of adherent iris with a small sharp ear curette. (This variation of the technique is probably not often necessary, but in this case was valuable.)

Six days after operation V. = counting fingers at ten to twelve feet, and two days after that V. = 20/100 and the tension (Schiötz) was 7 mm. Three weeks after operation the distant vision remained the same, and it will probably never be better, on account of unabsorbable exudates. With a plus one spherical lens the patient could read Jaeger no. 9 at twelve to fourteen inches, and she returned to her work as a laundress.

I am well aware of the criticisms that are likely to be aimed at sclero-post-iridectomy. The possible inclusion of iris or ciliary tissue in the scleral wound, the possible injury to ciliary body and lens, the danger of zonular rupture and extrusion of the viscid vitreous into the anterior chamber to further block drainage will all be viewed with alarm and pointed to as questionable. But in my observation these dangers are proportionally less and the good results proportionally more by this than by any other method of iridectomy for glaucoma.

It is true that I have operated on not more than eighteen or twenty cases by this technique in the last five years or so, but the results as a whole have been satisfactory—more so than by any other method—and I hope to do more as opportunities arise.

Please do not misunderstand me. I am not offering a cure, by means of a new operative technique, for glaucoma. I am offering merely a safe, easy, and above all a rational method for the relief of hypertension in cases of glaucoma with inadequate intraocular drainage due to obstruction of the spaces of Fontana by iris adhesions. The cause and the cure of glaucoma are, as ever heretofore, in nubibus.

Coffey and Church streets.

CONJUNCTIVOPLASTY IN CERTAIN CORNEAL AFFECTIONS

JOHN GREEN, M.D., F.A.C.S.

SAINT LOUIS

The cases successfully treated with a conjunctival flap included ulcer, perforation of the cornea, and inveterate pannus. The advantages of this treatment are rapid healing and prompt relief from pain. Read at the annual meeting of the American Ophthalmological Society, Quebec, June 27, 1927.

The several processes concerned in the repair of corneal denudations and ulcers may be classified as follows:

(1) Extension of an epithelial sheet from the borders of the lesion to cover the defect;

(2) Insinuation of blood vessels into the corneal tissue in the direction of the lesion, associated (in some cases) with a slough of necrotic and infected material covering the base of the ulcer; and, finally, epithelialization;

(3) Development of a true tongue of conjunctiva, extending over the lesion and becoming adherent to it, thus forming a pseudopterygium. (This process is most familiar in chemical burns of the cornea.)

A typical example of repair by the first process is in the case of superficial noninfected abrasions. We are all familiar with the surprising rapidity with which epithelium covers over these defects. The repair is usually so perfect that the minutest scrutiny with the corneal microscope and slit lamp fails to reveal any evidence of former injury; and in the case of central denudations recovery is without visual impairment. Following the indications of this simple process of repair the most effective treatment is by mild antiseptics, with a bland ointment containing hyoscin and holocain, and the wearing of an occlusive dressing for a day or so.

In the case of true ulcers, measures designed to enhance the natural process have proved most efficacious. Dilatation of the new-formed blood vessels and local increase in circulation are promoted by dry or moist heat. Lymphatic activity is increased by dionin. Infection is combated by antiseptic collyria, or more effectively by topical application of strong antiseptics, cauterants, or heat, often supplemented by curettage. An accompanying iritis is controlled by atropin.

Measures such as these are curative in the majority of denudations and ulcers, whatever their origin and whether infected or noninfected. When, however, they fail, as they occasionally do, I suggest that we give heed to nature's third process of repair, and fashion some form of conjunctival flap for temporary or permanent coverage of the corneal lesion. There is nothing novel in this suggestion. Conjunctivoplasty in corneal ulcer has been lauded by a limited number of ophthalmic surgeons. I suspect, however, that these advocates have often been regarded as "faddists" and hence their example has not been widely followed.

A conjunctival flap, if thought of at all, is considered as a last resort, and is then used with trepidation rather than with confidence. Such an attitude is, I believe, unwarranted. A conjunctival covering to an ulcer serves several purposes: First, it is a most efficient method of controlling pain incident to exposure of sensory nerve endings. Second, it protects the denuded area from any detrimental external influences such as wind, dust, palpebral irritation, or conjunctival secretions. Third, the serum transuded from the vessels of the flap forms a nonirritating film which by the direct action of antibodies probably aids in the repair of the lesion.

In my experience conjunctivoplasty has proved especially valuable in the following types of cases:

(1) Marginal ulcer.

(2) Inveterate pannus, persisting after the subsidence of acute trachoma.

(3) Serpiginous ulcer.

(4) Hernia of Descemet's membrane following the perforation of a serpent ulcer.

(5) Perforation of the cornea following central syphilitic keratitis.
(6) Ulcer of the Mooren type.
(7) Ring ulcer of the cornea.

Inveterate pannus and marginal keratitis.—R. W., aged 38 years, male, was first seen December 27, 1923. He had long been a victim of chronic trachoma. Recurrent attacks of pannus accompanied by small ulcers compelled him to stop work for two or three weeks, and, as these attacks came several times a year, his work—that of a machinist's helper on a railroad—had been seriously interfered with. Local treatment consisting of holocain, hyoscin, silver nitrate, and scarlet red salve failed to eradicate the pannus or to prevent ulceration. Pain was a conspicuous feature, and by reason of its frequent recurrence and long continuance was rapidly undermining the patient's morale. On March 17, 1924, he developed a marginal ulcer located from seven to nine o'clock.

The entire area of the pannus and ulcers at the upper limbus was curetted. Partial peritomy was performed at this site and a conjunctival flap drawn down to cover the entire curetted area. The marginal ulcer from seven to nine o'clock was curetted and another small conjunctival flap was drawn up to cover this area. The patient was seen again two years later. His eye had remained entirely free from ulcers or pannus. There was a small conjunctival cyst at nine o'clock adjacent to the cornea. This was removed, and one suture was inserted. Vision 20/30.

A more extensive use of this method is reported by Starr[1], who in a case of nearly complete thick vascular pannus dissected off the latter and covered the denuded area with a conjunctival flap. Useful vision was restored.

Serpiginous ulcer.—E. N. T., male, aged 59 years, had had recurrent attacks of ulceration of the right cornea for twelve years. The present trouble began two months ago. Treatment at an eye clinic for seven weeks was without improvement. The right conjunctiva was inflamed and velvety. An irregular serpiginous ulcer occupied the central portion of the cornea. General condition, fair. Wassermann, negative. Local treatment, silver nitrate one percent scrubbed on the upper lid, holocain one percent, atropin and cocain in oil three times a day, dry heat, and boric acid flush. On June 7, my assistant, Dr. C. A. Hobart, incised the conjunctiva adjacent to the lower corneal margin and drew the flap upward with several interrupted silk sutures. The following day two of the sutures had pulled out. They were reinserted, and the flap drawn up again. The operation was followed by immediate relief from pain. Four days after the first operation, the flap had almost entirely retracted. The staining area had diminished about fifty percent. Ten days later there was a slight extension of the denuded area, accompanied by pain. This yielded to routine treatment. When the patient was last seen, October 29, the eye was white and quiet; vision 6/32.

Keratocele following hypopyon keratitis.—M. G., aged 65 years, was seen at the city hospital eye clinic with hypopyon keratitis. The ulcer occupied the lower-outer quadrant. Perforation soon took place, with evacuation of the hypopyon, followed by a hernia of Descemet's membrane. The eye was very irritable (ciliary congestion, lacrimation). Tension was minus. The conjunctiva was incised for about one third of its circumference at the lower corneal margin, undermined, and drawn up to cover the ulcer completely. Healing took place without incident and the flap retracted save at the site of the ulcer, where a little tongue became firmly adherent. A year later a cataract was successfully extracted after preliminary iridectomy.

An equally favorable result following a similar procedure is reported by Kuhnt[2]. Cirincione[3] has successfully used complete conjunctival coverage of a hypopyon ulcer after cauterization and trephining at the limbus.

Central keratitis with perforation.—E. D., aged 34 years, presented himself at the city hospital eye clinic with disc-shaped deep infiltration of the left cornea. Wassermann, positive. A loss of epithelium centrally led to curettage

of the central portion of the cornea. After this, epithelialization took place rapidly. Local treatment, atropin and mercurochrome. The patient also received mercurial inunctions.

Several months later he appeared with the statement that the eye had suddenly become very painful the night before. There was now a central perforation of the cornea with prolapse of the iris. The patient was admitted to the hospital and treated for ten days with atropin, two percent mercurochrome, fomentations, mercurial inunctions, and sodium salicylate internally. The perforation showed no tendency to close. The conjunctiva was completely circumcised and undermined and a silk purse-string suture run around the edge. An attempt was then made to replace the prolapsed iris, and this seemed to be successful. The purse-string suture was drawn up, tied, and reinforced with two additional silk sutures. Binocular bandage.

The operation was followed by almost immediate relief from the pain, which had been quite severe. At the first dressing on the sixth day following the operation, the suture had partially pulled out, and it was found that the anterior chamber had reformed. After full retraction of the flap the iris was found adherent to the scar at the temporal side.

A case closely resembling the foregoing is reported by Muirhead[4]. A keratitis resembling an interstitial keratitis began at the periphery and extended to the center, where perforation took place. Recovery with fair vision followed curettage of the edges of the perforation and the placing of a conjunctival flap.

Ulcer of Mooren type—spastic entropion—iritis.—J. M. L., male aged 58 years. In March, 1924, the left eye became inflamed and painful. The patient believed that the cause of the trouble was the reception in the eye of some embalming fluid. Treatment covering a period of six weeks had not helped.

Examination showed a spastic entropion and a marginal ulcer with undermined edges running from four to eight o'clock. The depth of the ulcer, its situation and ragged overhanging edges, suggested an ulcer of the Mooren type. There was diffuse staining of the lower half of the cornea and a low grade iritis. The usual local treatment was unsuccessful. Several ulcerated dental roots were extracted. The patient was given several milk injections with the usual systemic reaction, but without improvement in the ocular condition. A semilunar strip of skin was excised from the lower lid, the entire ulcerated area was curetted, and a conjunctival flap was drawn up to cover the entire area of the ulcer. Recovery was uneventful. The flap retracted partly, but remained adherent over the site of the ulcer. The patient was seen a year later. The eye was entirely well. Vision, owing to an exudate in the pupil, was only 1/50.

Any method which offers a fair prospect of checking the progress of this type of ulcer should be seriously considered and promptly practised. Most of the reported cases indicate the futility of usual therapeutic measures. Evidence is accumulating that early coverage of the cornea with a conjunctival flap offers a fair prospect of a successful outcome. Cases in point are those of Marcard[5] and Tyrrell[6].

Ring ulcer of the cornea.—W. A., aged 30 years, consulted me several years ago on account of bilateral trachoma. At this time the right upper eyelid was much thickened, with formation of scar tissue and entropion. There was pannus with repeated ulceration. In the left eye the conjunctiva was thick and velvety but there was no pannus. I excised the tarsal cartilage of the right eye, followed by prompt improvement and ultimate cure of the trachoma. The condition of the left eye did not justify operation at this time, and consequently medical treatment only was resorted to. When last seen both eyes were quiet and it appeared that the trachomatous process in the left eye was quiescent. About August 15, 1925, the patient thought that he got a cinder in his left eye. At any rate, the eye became acutely inflamed and painful. On September 1,

1925, he was seen by my assistant, who found an acutely inflamed eye with pannus and ciliary injection. The patient was advised to remain for treatment but declined to do so. He returned to his home town, where a local oculist performed an excision of the tarsal cartilage. Apparently loop sutures with the knots on the conjunctival surface were used. At any rate there was an extreme amount of irritation and pain following the operation, so that narcotics had to be resorted to. The sutures were removed at the end of the third day but the patient's suffering continued unabated. Finally, on September 21 he returned to St. Louis. The condition at this time was desperate. The entire periphery of the cornea was occupied by a deep ring ulcer which had destroyed all but a little island of epithelium not more than 2.50 mm. in diameter in the center of the cornea. Fortunately, perforation had not taken place, and the pupil, which could be dimly seen, was round and active. The patient had spent several sleepless nights, and was much prostrated by his suffering.

The ulcer was lightly curetted. The conjunctiva was completely circumcised, freely undermined, and a silk purse-string suture run through the edge of the flap thus formed. When the purse-string was drawn taut, the entire corneal surface was covered by the flap.

The patient spent a comfortable, almost painless night, and slept soundly. To curtail the history, it may be said that he made an excellent recovery, but the conjunctiva became adherent to all but the central part of the cornea. It has been interesting and surprising to note the increasing thinning and transparency of the membrane, so that it became possible to discern easily the texture of the iris and the motility of the pupil. Needless to say, vision is low—1/60.

Recently (June 5, 1927) I dissected off the flap. It was rather loosely adherent in all but two or three places. Owing to the large amount of irregular astigmatism much visual improvement is not to be expected, but the improvement in the appearance of the eye is noteworthy.

Treatment for ring ulcer has generally been unsatisfactory. When the process has not compelled enucleation, it has not rarely resulted in a blind eye. Recently Post[7] reported an excellent result—healing of the ulcer with good vision—from the application to the ulcer of Shahan's thermophore at 150°F. for one minute.

In a rather careful search of the literature of the past twenty years I have found no instance of complete ring ulcer treated with a conjunctival flap. I am convinced that in this case it was the means of saving the eye with a little vision.

Beaumont building.

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INDIA RUBBER IN ANTERIOR CHAMBER: REPORT OF CASE: ALSO DESCRIPTION OF ANTERIOR CHAMBER IRRIGATOR

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NEW YORK

The patient had had a combined cataract extraction eleven years earlier, with excellent results. There were no inflammatory changes. A number of particles of rubber were embedded in the crypts of the lower part of the iris. The author describes and illustrates an anterior chamber irrigator which he feels is likely to obviate the risk of introducing India rubber into the anterior chamber during irrigation.

Much experimental and considerable research work has been carried on regarding the tolerance of the eye to intraocular foreign material. We know that the resistance to such an invasion depends upon a number of circumstances and that severe inflammation ending in the destruction of vision may be produced without the actual entrance of microorganisms.

The preservation of a useful eye containing foreign material depends on whether or not the foreign material is aseptic, upon the tissue of the eye involved, upon chemical decomposition of the substance, and upon mechanical irritation. Nearly all aseptic foreign bodies that do not decompose after a comparatively short space of time either remain free in the eyeball, or become encapsulated by an organized exudate. Even under these conditions, after remaining quiet for many years they often provoke sudden and violent inflammatory attacks which may lead either to destruction of the eyeball, or to marked loss of visual acuity.

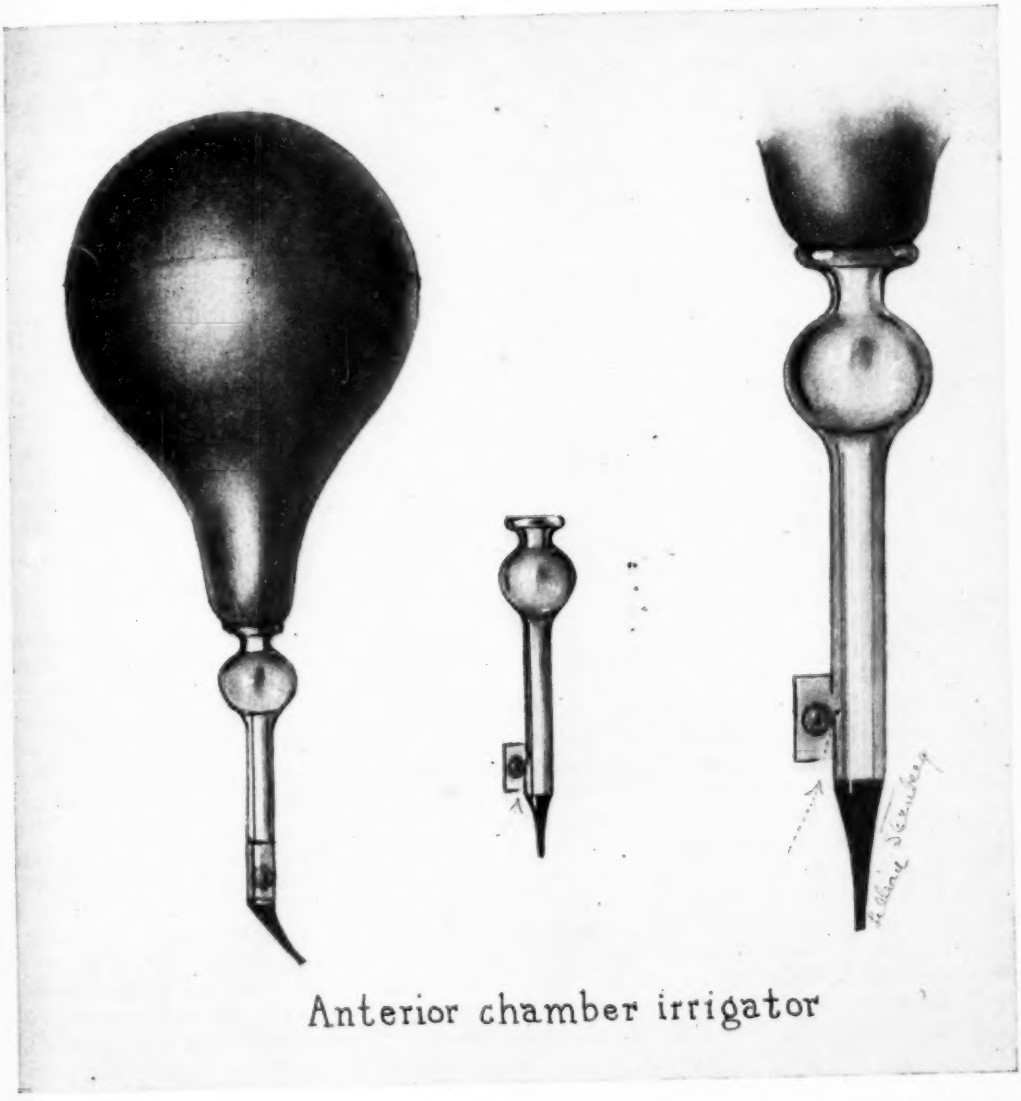
Case Report.—I wish to report the following case: The patient, a woman seventy-five years of age, was operated upon eleven years ago by one of our most prominent ophthalmologists for mature senile cataract. From the history I gathered that a combined extraction had been performed on the right eye with a most excellent result. The coloboma was well formed. The pillars of the iris were free and not incarcerated in the skilfully made corneal section. A fine secondary membrane however limited the vision to 20/40 plus, with her correcting lens. By oblique illumination my attention was first attracted to a number of small irregularly shaped reddish masses, from one to two mm. in size, embedded in the crypts of the lower part of the iris. Their relative position changed with the dilatation and contraction of the pupil. There were no signs of any inflammatory changes in any structure of the eye.

The examination with the slit lamp was most interesting. Situated in the crypts of the iris were six small pieces of red rubber. In spite of the fact that this foreign material had remained in the eyeball over a period of eleven years they had the appearance of having just been wedged into the crypts of the iris. No organized encapsulating membrane could be made out and they are apparently causing no harm by their presence. While the anterior chamber will tolerate such a body the question occurred to me whether the vitreous would withstand this material equally well. I am of the opinion that it would not.

Certainly if we could devise any method by which this complication, that is the entrance of any foreign material such as rubber, sediment in irrigating solution, or air bubbles could be eliminated, our technique would be more efficient. If material gains entrance into the anterior chamber, where it remains and is recognized years afterward, it is just as reasonable to suppose that it may be introduced into the vitreous, or become lodged in the angle of the anterior chamber and possibly produce pathological changes.

I wish to submit a description of the glass anterior chamber irrigator (see drawing), devised by me and made by E. B. Meyrowitz of New York. The bulb is made of red rubber with sufficient resistance to assure refilling.

The upper round extremity of the irrigator serves two purposes. If any foreign material is contained in the solution in the bulb it can be readily seen and the irrigation discontinued. The upper rounded extremity is far enough from the tip, so that there will be sufficient time to permit the withdrawal of the irrigator and prevent the entrance of foreign material into the eyeball. Air bubbles, while not in any way dangerous, are often annoying and their entrance into the anterior chamber can be easily prevented. A steady flow of fluid is also maintained by this arrangement. The tip is made a dark blue, so that the insertion into the anterior chamber is quickly and easily recognized. The instrument is light and not cumbersome. A second model is being made in metal, with a ball valve arrangement attached to the side which enables a more rapid refilling of the bulb. The irrigator with this attachment is made of metal, as it was found impracticable to manufacture it of glass.



Anterior chamber irrigator

150 West Fifty-fifth street.

STERILIZATION OF SHARP INSTRUMENTS

M. HAYWARD POST, M.D., F.A.C.S.

SAINT LOUIS

The solution described, after successful use for several years, avoids damage to the surfaces or edges of instruments even after prolonged immersion; and it is satisfactorily germicidal.

There is still much diversity in the methods of sterilizing cataract knives and other sharp instruments, indicating that no one method is quite satisfactory. This question has been discussed ad nauseam, but still remains unsolved. The principal methods may be considered under three groups: first boiling in water; second, subjecting to a high temperature in oil; and third, immersion in various chemical solutions.*

It may be accepted as a proven fact that boiling instruments in sterile water does not affect the edges nor produce rusting, providing no electrolytic action takes place. When injury does occur it is the result of oxidation. Lancaster[1] quotes Roscoe and Schorlemmer[2] on this point. They say: "Iron only rusts in the presence of oxygen and liquid water containing either carbonic or some other volatile acid or a metallic salt in solution;" and "Liability to rust is diminished in the presence of alkalies." By careful experimentation, Lancaster found that polished steel plates showed faint spots after boiling for three hours in a one percent solution of bicarbonate of sodium, and that after five hours well marked oxidation was present. In a footnote he states: "If the sterilizer is of such material that it is acted upon by the boiling soda it is possible to get conditions favorable for tarnishing the instruments. I have known this to occur and I am not able to rule it out in this experiment. In fact, the solder inside the sterilizer used in these experiments was extensively eaten away as the result of several months' usage." He finds, however, that a solution of potassium or sodium hydrate prevents even this faint sign of rusting. From these statements of a very careful observer, we may conclude that it is quite possible by boiling under proper conditions, to sterilize sharp instruments without injury. It is, however, almost impossible under ordinary hospital conditions to be anything like sure of a sterilizer that will approach this ideal. In fact, the contrary is almost the invariable rule, so that boiling of sharp instruments, due to the conditions found in actual practice, has come to be looked upon with greatest suspicion by the majority of ophthalmologists.

The second method is quite satisfactory in many respects. Oil is, however, unpleasant to handle and difficult to remove from the knives after sterilization is completed. The temperature of the oil, furthermore, must be watched to prevent excessive heat developing. Dor[3] states that knives can thus be heated to a temperature of 140 degrees Centigrade or upward. Jaffa sesame-oil is recommended by Conradi[4], who does not believe that the spores of bacillus vulgatus and mesentericus are killed by boiling in 1 percent solution of soda.

Other methods that may be mentioned are exposure to formaldehyde gas, dry heat for one hour at 150 degrees Centigrade as recommended by

* Since sending this paper for publication, the author's attention has been called to Morax' method of sterilization of sharp instruments by dry heat, as described by Finnoff in the American Journal of Ophthalmology, August, 1927, pages 598–599. The knives are fixed in holders, which are then placed in test tubes. These test tubes are next wrapped in two layers of heavy wrapping paper and subjected to a heat of 160°C for a half hour. After removal from the sterilizer they may be kept wrapped up ready for use at any time. By this temperature the writer states that all growth, including spores, has been killed. The objections to the method are that the same knives are not immediately available for a second operation, and that the special apparatus for such sterilization is not always obtainable.

Casey Wood[5], live steam according to the method of Stroschein[6], and the use of a solution of spirits of soap, as practiced by Straub[7] for periods of from one to thirty seconds, all of which have been used with considerable success.

The use of various chemical solutions, despite the fact that it has undoubtedly been difficult to obtain sterilization as complete as that which follows boiling, is, nevertheless, probably employed by the great majority of ophthalmic surgeons at the present time. In my hands the usual procedure of 95 percent carbolic acid for about three minutes, followed by 95 percent alcohol for an indefinite period and finally a water bath, has proven most unsatisfactory, as oxidation follows a very limited exposure to 95 percent carbolic acid. If the knives are overlooked for a short time while lying in the carbolic acid solution during the other preparations attendant upon the operation, the surgeon may find to his chagrin that his knife blades have become black and useless.

For a number of years my associate, Dr. A. E. Ewing, had been boiling his knives in albolene. About the time when this problem was forcing itself upon my attention due to several accidents to knives in process of sterilization, I noticed that he had ceased using this method. In answer to my inquiries he replied that he no longer found it necessary, as he had hit upon a solution which was much simpler to handle and entirely satisfactory. It was decided to study the action of this solution and compare it with that of a number of possible alternatives.

Some ordinary one inch wire nails were placed in various solutions and watched for a period of three weeks. The results are here recorded: Pure carbolic acid—Considerable rust; Chloroform—No rust; Liquid albolene—No rust; Glycerin—No rust; Liq. cresolis comp.—No rust; Alcohol 95%—Considerable rust; Alcohol 95%, with Liq. cresolis comp. 2%—No rust; Alcohol 95% 5 oz., Commercial chloroform 3 oz.—Considerable rust; Alcohol 95% with Liq. cresolis comp. 2% 1 oz., Commercial chloroform 3 oz. Albolene 4 drops—Considerable rust and greenish deposit; Alcohol 95% with Liq. cresolis comp. 2% 1 oz., Commercial chloroform 1 oz., Albolene 4 drops—No rust.

In order to determine whether polished razor blades would act in the same way in these latter solutions, the nails were replaced by razor blades. It was found that in the solution of Alcohol 95% 2 oz., Commercial chloroform 2 oz., Liq. petrolati 3 drams, much greenish rust had appeared in eight days. But in the solution of Alcohol 95% with Liq. cresolis comp. 2% 2 oz., Commercial chloroform 2 oz., Liq. abolene 2 drams, no rust or tarnish appeared upon the blades after many days.

This solution, therefore, seemed to be ideal, provided it was found to be sufficiently germicidal. Through the courtesy of Dr. D. L. Harris, I was provided with broth cultures containing a mixture of staphylococcus albus and aureus, streptococcus, and Klebs-Löffler and typhoid bacilli. Two inch black threads, no. 40, were immersed in these cultures and allowed to remain for a period of at least ten minutes. They were then thoroughly dried and placed in the above sterilizing solution for periods varying from one fourth to ten minutes, after which they were dropped into tubes containing sterile broth and incubated for forty-eight hours. Repeated experiments showed that growth appeared in all tubes containing threads which had been in the solution for periods less than one minute, but in no instance where exposure to the germicidal solution had lasted for one minute or more could any bacterial growth be found in the cultures.

It is not believed that this solution is able to kill spores, except after a period of several days, but from a practical point of view it does not seem necessary that it should do so. Further experiments along this line should prove of interest.

For somewhat over two years now this solution has been in use by myself and a number of colleagues. During this time a large number of operations have been done with it to our great satisfaction. My own method is to

wrap the knife blades lightly in cotton and immerse them in the solution immediately upon arriving at the operating room. I feel that the slight injury which they may suffer from being wrapped in cotton is more than counterbalanced by the assurance that the tip of the knife or its edge will not be damaged through some carelessness. They are allowed to remain in the solution for a period of a half hour or possibly longer. One hour or many will do no harm. The cotton is then removed and the knives are laid upon the table and allowed to dry. Occasionally, a little wiping may be necessary to remove a slight film of albolene.

Staining has never occurred as a result of this solution, and repeated operations have been done with the same knife without any appreciable loss in sharpness. In fact, knives are never discarded or sent to be resharpened, excepting as a result of mechanical injury due to careless handling, which will occur at times despite all precautions. Following the operation the knives are reimmersed in this solution for a minute, and after allowing them to dry in the air are put away without wiping them off. A slight film of albolene is thus left upon the knife, which keeps it bright and free from oxidation.

This method has been found to be very valuable and very practical, as such a solution is inexpensive, is capable of being used a number of times provided evaporation is prevented by keeping the sterilizing dish covered, and is obtainable in practically any hospital where one may have occasion for its use.

520 Metropolitan building.

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PERITHELIOMA OF THE ORBIT

ROBERT WALTER BLEDSOE, M.D., F.A.C.S.

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The patient was a healthy boy of eleven years. An orbital tumor was removed from within its capsule and found to be a perithelioma. It quickly recurred, and was again removed through the original incision. After a second early recurrence the orbit was exenterated for symptomatic relief. At autopsy, a large extension was found within the cranium, but there were no metastases. Read before the Eye, Ear, Nose, and Throat Section of the Kentucky State Medical Association, Louisville, Kentucky, May 12, 1927. A report of the discussion appears in the Kentucky Medical Journal.

I wish to report the following case on account of its uniqueness in many ways: the evident extreme malignancy of the tumor, the rapidity of recurrence after apparent complete removal, its rarity in the orbital cavity, the youthful age of the patient, and the wonderful patient himself, to whom I am pleased to refer as "my boy Ranzle." It will be noted from the photographs exhibited that his features are very attractive; and his happy, cheerful disposition and radiant smile captivated everyone at first meeting.

While coming from the most humble of country homes, and having had few or no advantages of education or training (his mother having died when he was five years old), he displayed a profound susceptibility to suggestions as to manners, customs, etc. I say this knowingly, because so soon as he was able to leave the hospital after the operations to be described I took him to my home, where he spent much of his time.

The patient, R. W., male, aged eleven years, was referred to me by Dr. J. W. Abernathy, of Williamstown, Kentucky. He had been reared in the country and was typically healthy and exceptionally well developed for his age. His mother had died six years earlier, cause unknown. The father was crippled as the result of a fractured leg.

I saw the patient for the first time on April 6, 1926, and was given the following meager history: "Right upper eyelid swollen and somewhat inflamed for the past two months; but at no time had there been any pain, nor was the eyeball inflamed." This condition was attributed to having gotten a piece of cockle-bur in his eye during December, 1925 (three and a half months previously), while removing burs from a horse's mane.

Upon examination I found complete ptosis of the right eyelid, which was markedly enlarged and reddish-purple in color. The skin was loosely attached to an underlying hard, somewhat nodular mass occupying practically the entire upper half of the orbital cavity and extending backward under the supraorbital rim. Near the inner extremity of the eyelid one cm. above the inner canthus and one cm. external to it was a small elevation (four by four mm. in diameter), somewhat yellowish in color, over which the skin was smooth and very thin, almost like tissue paper, resembling the pointing area of an abscess. The vision of the right eye was 20/70, while the eyelid was elevated by the finger, and that of the left 20/20. The motility of the right eyeball in all directions was normal, the media clear, and the fundus normal.

The normal fundal arteries and veins aided in excluding the presence of aneurism. A small stab incision was made with the point of a Graefe knife in the yellowish elevation. No pus was encountered and not a large amount of blood; hence, both abscess and angioma were excluded. A probe was then introduced, which easily passed through apparent canals in different directions, one of which led directly downward to the conjunctiva, where the point of the probe could be seen through the thin mucous membrane. The mass could not be reduced by pressure, this precluding the possibility of meningocele. Roentgen-ray examination showed the sinuses to be perfectly

normal, thereby eliminating a perforating abscess from either of these. I asked Dr. D. T. Vail, of Cincinnati, Ohio, for his opinion of the case, and after a careful examination he suggested the probability of a bilobular cyst of the eyelid; but agreed that it was quite an interesting affair.

The first photograph (fig. 1) taken on April 15 probably shows the condition better than I am able to describe it. The patient entered St. Elizabeth

Figure 1. Appearance before primary operation.

Hospital, Covington, Kentucky, on April 19, 1926. Wassermann blood reaction test and urinalysis were made and found to be negative.

The tumor in the orbit grew rapidly, causing the inner half of the upper conjunctiva to appear as a bulging mass between the eyelids, reddish-purple in color, and extending from the inner canthus to the center of the cornea which it overlapped.

On May 3, 1926, with the assistance of Drs. Schwertman and Morris, the boy was etherized and operated upon. A long curved incision was made through the shaven brow from its outer extremity to the side of the nose on a level with the inner canthus. The periosteum covering the inner superior quadrant of the orbital cavity was elevated to permit palpation of the apex. The tumor mass being found not to extend beyond the posterior limit of the eyeball, the periosteum was replaced.

A thin capsule covering the mass was soon encountered, and by very tedious blunt dissection the tumor was finally delivered without rupturing the capsule, nor experiencing any excessive bleeding as was anticipated. The conjunctiva was stripped from the mass without perforation.

The tumor was distinctly pedunculated, having originated from the periosteum of the orbital roof one cm. posterior to the center of the supraorbital rim. The wound was closed with interrupted dermol sutures, a drain having been placed at the inner angle. Healing was prompt and without infection.

The tumor was an irregularly rounded, pedunculated mass, somewhat nodular. It weighed two hundred grains, and measured two cm. thick, four and a half cm. long, and two and four-fifths cm. wide. A photograph of the tumor is shown (fig. 2).

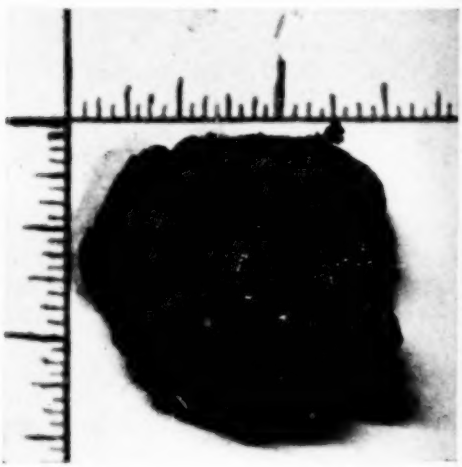


Figure 2. Tumor removed May 3, 1926.

Dr. A. J. Schwertman's microscopic diagnosis of perithelioma was confirmed by our pathologist, Dr. E. B. Backsman, whose report is given in detail.

Microscopic examination.—The specimen has a dense capsule of fibrous tissue. One notes blood vessels with

great hypertrophy of the tunica media. The tunica has undergone hyaline change. The lumen in all cases contains blood elements. Each of these blood spaces is lined with a single layer of endothelial cells. In several instances the tunica media seems to have contracted, producing a corrugated appearance of the lumen; complete occlusion of these arterioles is noted. Long, linear arterioles with thin media are also noted springing from the tunica media. (No tunica adventitia can be demonstrated.) From these radiate distinct fasciculi or columns of fusiform polyhedral cells, also multinucle-

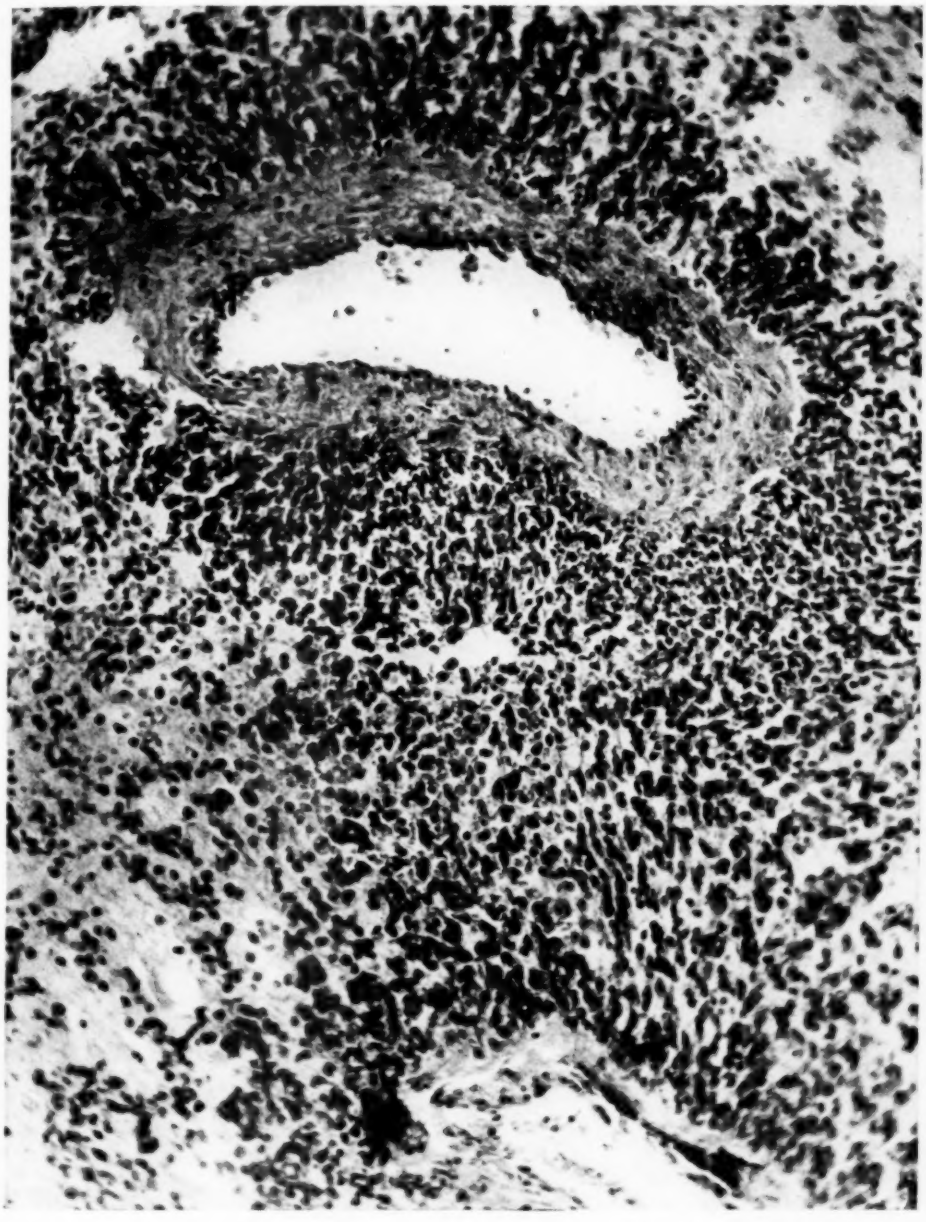


Figure 3. Perithelioma. Photomicrograph of growth removed May 3, 1926. Low power.

ated cells are found coursing throughout the section. Near the periphery of the tumor cloudy swelling is noted. No giant cells are found. Diagnosis: perithelioma of the orbit. (Dr. E. B. Backsman, pathologist, Saint Elizabeth Hospital, May 3, 1926.)

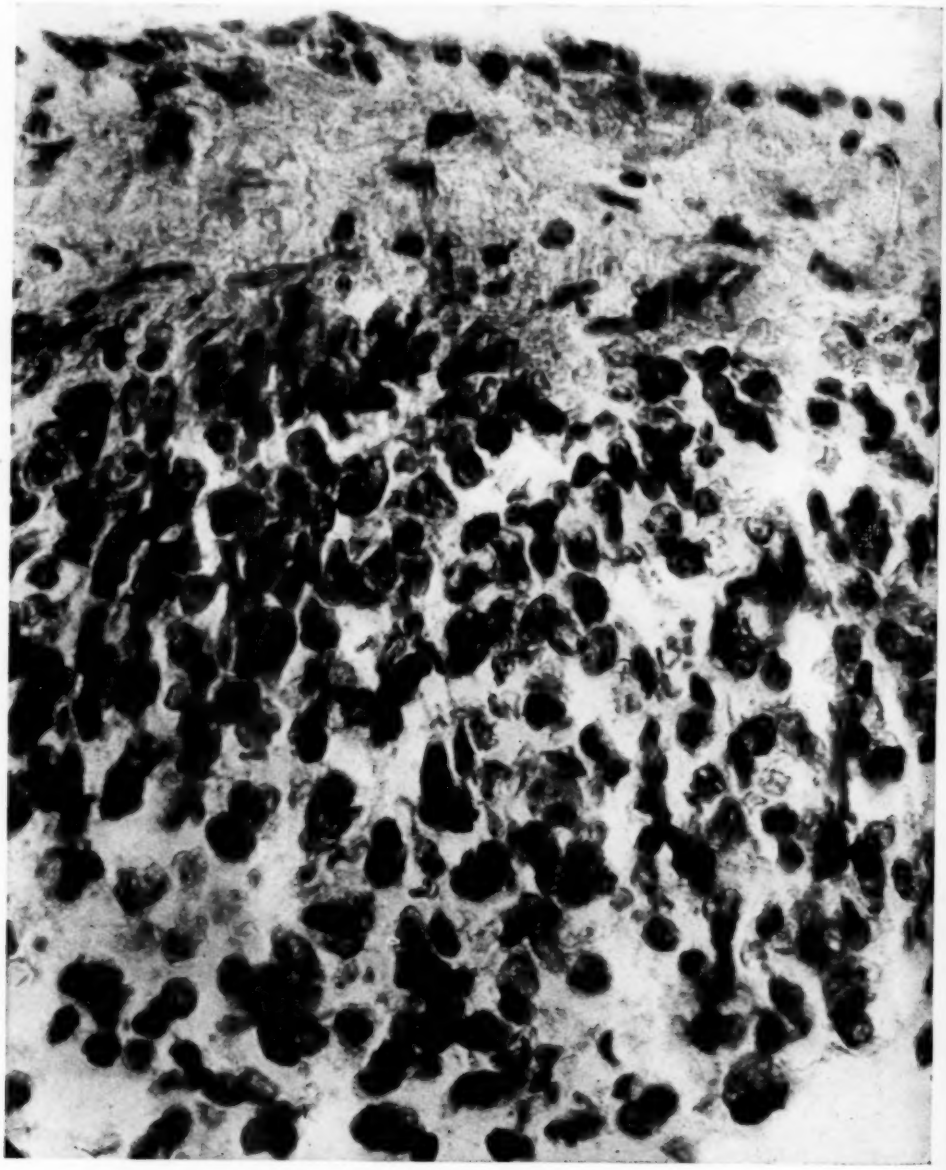


Figure 4. Perithelioma. Photomicrograph of growth removed May 3, 1926. High power.

The two microphotographs (figs. 3 and 4), one with high, the other with low power, show the typical blood vessel and cellular arrangement as found in perithelioma.

On May 8, 1926, five days after the operation, the patient was not nearly so well as on the previous day; in fact, was hardly able to be raised in bed long enough for me to take his portrait. This unexpected change proved to be the beginning of a violent attack of unquestioned measles, followed by a sus-

picious cough and afternoon elevation of temperature. On May 28, 1926, after negative physical, sputum and urine examinations, I took the patient to my home.

On June 1, 1926, after his first trip to a circus, he complained of his feet

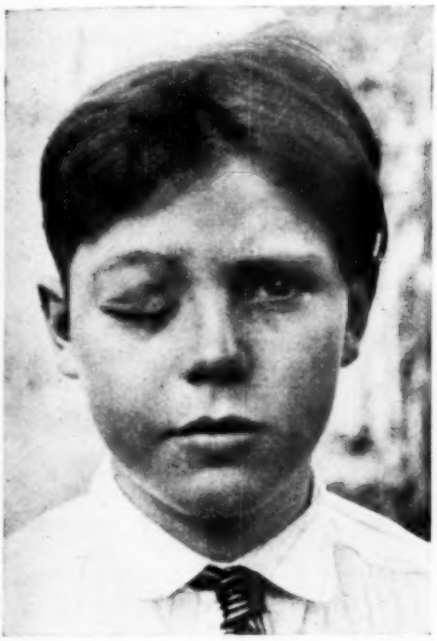


Figure 5. July 11, 1926.

hurting him. I found slight edema of the feet and ankles which, together with another urinary examination, indicated acute nephritis. On June 3 he was returned to the hospital for two weeks, during which time the renal disturbance subsided completely. The patient then went to his home in the country and remained until July 4, when he returned to my house. At that time, practically two months after the primary operation, there was evidence of beginning recurrence of the orbital growth. The vision of the right eye had improved to 20/30. From this time onward the tumor grew quite rapidly (figs. 5 and 6).

The second operation was performed August 31, 1926, through the original line of incision. The growth was more adherent everywhere and dissection was accomplished with greater difficulty than at the primary operation. The tumor was larger, measuring three by four by five cm., and weighed two hundred and sixty grains. Microscopically it showed clearly an increased malignancy over the first one, in that the fusiform cells were to be seen penetrating the capsule everywhere. I herewith reproduce verbatim the report of our pathologist.

Microscopic examination of second tumor.—Section taken from the tumor mass shows a dense fibrous capsule surrounding same, in which columns of cells have penetrated. Entire section shows numerous blood sinuses with layers of cells radiating from the walls. The entire mass is composed of many multinucleated cells. In several areas

Figure 6. August 30, 1926, the day before the second operation.

cloudy degeneration is noted. The section is evidently of rapid growth and therefore very malignant. Diagnosis: perithelioma of the orbit. (Dr. A. J. Schwertman, pathologist, Saint Elizabeth Hospital, September 1, 1926.)

A few days after the operation the patient was walking about the ward feeling finely, free from pain, and

having his customary wonderful appetite. The wound healed promptly. He was enjoying himself immensely by September 11th, when I left for a ten weeks' visit to California. Upon my return, about November 1st, I was informed that the patient had suffered a very severe attack of mumps, both parotid glands being involved, but with no recurrence of the nephritis.

The growth in the orbit had returned, now being nearly as large as before the operation on August 31st. From now on it increased rapidly in size, soon the sight was lost completely, and the

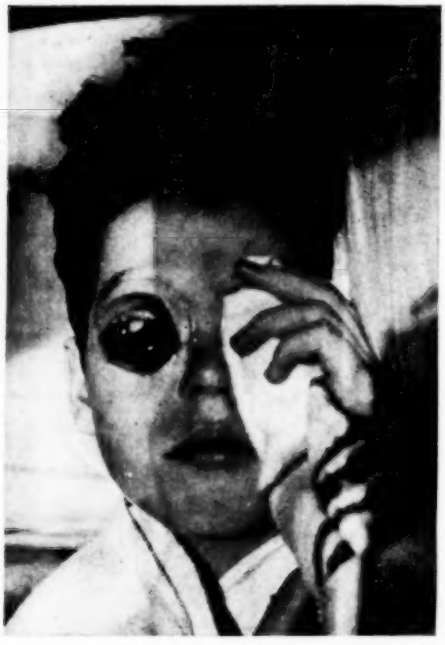


Figure 7. December 14, 1926, three days before exenteration.

patient suffered periodically from violent pain in the frontotemporal region, which was controlled only by morphine hypodermatically, other drugs having been tried first. He rapidly lost weight and strength to such an extent that he was unable to rise in bed or even turn over unaided, and refused nourishment for days.

Operation was deferred largely in compliance with the patient's wishes, as he dreaded it so terribly; but also to some extent owing to my conviction that the end was not far distant. However, the suffering became so intense that I prevailed upon him to submit to another operation for the relief of pain, so that he could enjoy his Christmas.

On December 17, 1926, under ether, I did a complete exenteration of the right orbit, including the lachrymal gland and periosteum, with all of its contents backward to the apex. A small erosion of the supraorbital plate was found, exposing the dura, another on the floor of the orbit leading into the antrum, and another into the ethmoid cells.

The relief from pain was complete and morphine was discontinued. However, the growth immediately began to recur and at the end of two weeks after the operation the orbital cavity was filled even with the eyelids.

The patient rallied quickly from the operation; his appetite, strength and happy disposition returned within three or four days, and he was looking forward with pleasure to the time when he could wear an artificial eye. In addition, he enjoyed his Christmas very much, although still in bed. The growth continued to enlarge rapidly, and occasional slight hemorrhages from it were followed by more frequent and severe ones.

During the second week in January, 1927, the pain in the frontotemporal region returned with increased violence which again necessitated the administration of morphine. Sensitiveness to light and sound increased until it became necessary to place the patient in a semidarkened room by himself. The loss of appetite, strength, and flesh was rapid, hemorrhages from the orbital mass increased in severity, and its extension into the nose blocked the right nasal chamber.

By February 1, 1927, the growth was larger than it had ever been, now protruding forward one and a half inches beyond the normal corneal location, and involving the subcutaneous tissues of the temple and supraorbital region.

Death occurred on February 12, 1927, following a violent hemorrhage from the mass. The size of the growth

may be estimated from the last photograph, taken shortly after death (fig. 8).

A complete **postmortem examination** was made and the findings are as follows: The tumor mass protruded one and three-quarter inches beyond the right eyelids. The subcutaneous infiltration raised the skin one-half to three-quarters of an inch in the right frontal region to one and one-half inches above the supraorbital ridge, and extended from the center of the nose outward to beyond the outer canthus. The frontal lobe of the brain was found

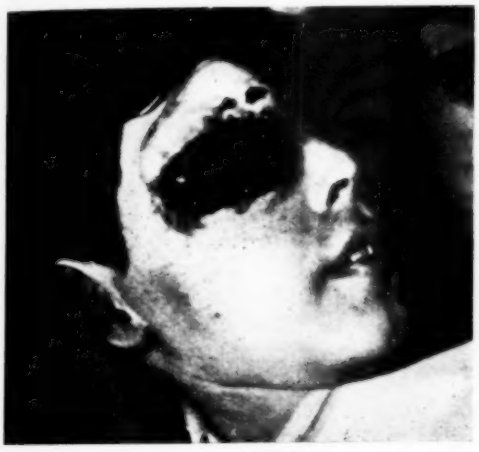


Figure 8. Appearance after death, February 12, 1927.

densely adherent to the tumor, which filled the orbital cavity, antrum, and right nasal chamber, there being no vestige of bony partition separating any of these cavities from the others.

The frontal lobe of the brain contained a mass the size of a closed fist, composed of a conglomeration of closely packed, discrete bodies, varying in size from a pea to a hazelnut. Macroscopically they closely resembled snail shells, each mass having the appearance of being rolled upon itself. Dr. A. J. Schwertman reports that microscopically they are identical with sections of the peritheliomatous growths previously removed. Evidently they were the result of direct extension through the dura and not of metastatic origin. Careful search for metastases in other organs was made but none was found.

The patient was under my observation ten months, during which period he was operated upon three times: May 3, 1926, August 31, 1926, and December 17, 1926. Each recurrence of the growth showed definite signs of increased malignancy.

The consensus of opinion, so far as I was able to learn by inquiry and from the literature, was very discouraging from the start, and particularly depressing to me on account of my attachment to the boy. I also learned that the results from the use of roentgen-ray and radium were practically equal, that neither promised much in the way of cure, but that both should be tried, which was done in this case.

For those who wish to further investigate the subject of perithelioma, it may be stated that a typical description is to be found in "Neoplastic Diseases," by Ewing, on page 341.

In the literature recording cases of orbital neoplasm, thirty-two authors have reported seventy-four tumors of various classes, but of this large number only four have been perithelioma, and these occurred in adults. The records of these four cases are as follows:

(a) Boulans. Clinique Ophtalmologique, 1924, v. 28, pp. 61–68, one case.

(b) Contino. Annali di Ottalmologia, 1924, v. 52, pp. 44–57, two cases.

(c) C. Boyle. Homeopathic Eye, Ear Nose, and Throat Journal, 1905, v. 12 pp. 157–159, one case.

In closing I wish to state that, in attempting to give full details of this unfortunate case, and also in presenting the many photographs, my hope is that they may at some time aid in an early diagnosis followed by prompt radical surgery, and that the final results in these now almost universally fatal cases may become more satisfactory.

1005 Madison avenue.

NECESSITY FOR CORRECTING REMEDIABLE EYE DEFECTS IN SCHOOL CHILDREN

WILLIAM H. WILDER, M.D., F.A.C.S.

CHICAGO

Emphasis is laid upon the importance of finding and correcting eye defects in early school years. Experiences in a selected school district in Chicago are described, with special reference to sight saving classes and classes for the blind. Recommendations are made as to the establishment of special eye clinics for school children under salaried medical experts. Read October 14, 1927, at the Conference of the National Committee for the Prevention of Blindness.

Few people realize the prevalence of eye defects that impair sight. Before an audience of educated men and women such as this, it would seem hardly necessary to make an argument on the value of or necessity for correcting eye defects in school children, for probably it is obvious to all of us on presentation of the subject.

But comparatively few intelligent people, unless their attention has been called to it, are aware of the magnitude of the problem of conservation of vision of school children, and too few are interested to the extent of using their influence to further the efforts being made by certain agencies along this line.

In a report of the United States Commissioner of Education about three years ago there appeared this significant statement: "In the second report of the Provost Marshall General on the operation of the selective service system it is shown that ten percent of all rejections of drafted men were on account of eye defects. This does not include a large number of men with eye defects of a minor character or with eye defects corrected by glasses, who were classified in the limited service group. Furthermore, it does not include those men having eye defects, corrected or uncorrected, who were definitely rejected for other defects before their eyes were reached in the order of examination. The figures, however, are sufficiently large to demonstrate that visual defect is responsible for a substantial impairment of manpower needed in time of war, no less than for pursuits of peace.

"This is merely a confirmation in a dramatic way of the facts that have been revealed by examination of the eyes of millions of school children in all parts of the civilized world during the past generation. A conservative interpretation of the data revealed by these examinations would be that approximately twenty percent of all school children are in need of corrective treatment for eye defects. Also it has been demonstrated that there is a progressive increase of eye defects with grade progress in the schools. It is clear, therefore, that the care and protection of the eyesight of school children is a school duty and a school problem. It is incumbent upon the schools, not only to discover defects and disabilities that impede growth and interfere with school progress, but also to make the conditions of school life and school practice such as will conserve and promote the physical and mental fitness of the children."

Desiring to test the truth of this statement and to learn the extent of the educational and health problem resulting from eye defects of school children in Chicago, the Illinois Society for the Prevention of Blindness in May, 1920, suggested to the Commissioner of Health a cooperative plan whereby the society should conduct examinations of the eyes of pupils in a selected group of schools where conditions might be expected to be typical of those in the school population at large.

The plan was accepted by the Commissioner of Health and received hearty concurrence of the Director of Special Classes under the Board of Education.

A certain school in the Stockyards district was selected for the first work, as representing a variety of nationalities and home environment. The examinations were made by two ophthalmologists, appointed and maintained by the society to serve as members of the staff of medical inspectors under the Department of Health, but to specialize in the examination of the eyes of the entire school population.

These two eye experts spent thirty-two days in examining the 681 pupils in the eight grades above the kindergarten for eye defects and refractive errors. Of this number 345 were found to have normal vision; 336, nearly fifty percent, were found to have some defect of vision, most frequently an error of refraction; and of these 105, more than fifteen percent of the whole, had symptoms of eye-strain. Among the pupils with visual defects more than half, to be exact 185 of the 336, had never had any kind of examination during their entire school period.

In explanation it should be stated that two years previous to this survey the Board of Health, on account of limited budget, had withdrawn two ophthalmologists from the staff of medical inspectors in the schools, and that the staff had been so reduced otherwise that it had been practically impossible to consider routine examination of the eyes of pupils except in those obvious cases where a condition approaching blindness rendered the pupil unable to do classwork. Moreover the authority of the health department for making physical examination of pupils, except for suspected contagious disease, is so limited as to preclude special examinations of any nature. Likewise the Board of Education lacks the authority to expend funds for medical service for the general school population, and so could not supplement the service of the health department by an adequate supervision of the health of the pupils.

This survey demonstrated the importance of eye examinations in the schools, for it is obvious to any intelligent person that a school child with the handicap of defective vision will have great difficulty in keeping up with the classwork or may fail utterly. Furthermore, even if vision is good and there exists a refractive error of the eyes such as hyperopia or astigmatism, the resulting eye-strain may cause lassitude, drowsiness, eyeache, headache, and other nervous disturbances. Then naturally follow inattention, lack of concentration and interest, and inability to keep up with the work. For reasons of this kind a child may fail to make the next grade, becoming a repeater, and may even be withdrawn from school under the idea that he is backward, all for lack of a careful examination and of a pair of properly fitting glasses.

With the opening of the next school year, in September, 1920, we were asked by the Director of Special Classes under the Board of Education to furnish special eye examinations for all pupils enrolled in the classes for the blind, and for such other pupils as should be selected by principals, teachers, and nurses in the schools as having known or suspected defects of vision. In including service to the latter group it was indicated that special classes—sight-saving classes so called—would be promptly established for all pupils found to have irremediable defects of such a degree as to impede normal progress in the grades.

It seemed desirable to meet this request, hoping that it might lead to the establishing of such classes for all school pupils needing limited eye work.

In examining the eyes of school children considered practically blind, and of children of school age suffering from grave defects of vision, the work must be of the most painstaking character by experienced ophthalmologists, involving patient and faithful cooperation on the part of the parents and the patient. General health conditions underlying eye ailments must be thoroughly tested and often a period of general treatment undertaken before results can be secured.

Many of these cases were examined in the centrally located eye clinics and many ophthalmologists gave gratuitous attention in their private offices to children deserving free service.

Forty-six schools referred 248 pupils asking for examination of eye defects that were suspected of retarding progress in school.

Number referred for suspected defective vision	248
Number found on examination not needing treatment	27
Number for whom corrective treatment gave improved vision	178
Number referred back after correction to regular classes	74
Number referred to sight-saving class	18
Number found appropriate for class for blind	5

The plan for this service was continued the following school year, September, 1921, to July, 1922, with little variation. The worker on the staff of the society detailed to this work made home visits, discussing with the parent the visual defect found and learning whether attention would be secured by the family or through a free clinic, this being determined by the ability of the family to pay for service and glasses if needed. The worker's attention was also directed to overcoming any prejudice the family might have against the use of "drops" in the examination and refraction of the eyes, and to persuading the family to refer to experienced eye specialists for such examination rather than to the variety of stores and offices where advertising of free examinations and cheap glasses often proves too alluring to parents with limited means.

For the sixty-three pupils found this year appropriate to the sight-saving classes, the Board of Education promptly established such classes. Tested equipment and appliances adapted to eliminating undue eye-strain were installed and a program of balanced book work, manual training, and recreational games worked out for the pupils. Teachers gave the most patient individual attention to the requirements of the variety of eye ailments represented among the pupils.

The satisfactory operation of these sight-saving classes demonstrates the successful outcome of joint medical and educational service for those physically handicapped. In the diagnoses of this group of pupils are found myopia, strabismus, congenital cataract, sympathetic inflammation following injury, and other acute inflammatory eye ailments as well as eye conditions associated with general disease, all of which result in permanent handicaps of partial or total blindness if undiscovered (and so untreated) during the early stages.

Tabulation of pupils referred, examinations made, corrections effected, and school recommendations made for school year September, 1921, to July, 1922:

77 schools referred 352 pupils.
191 were found appropriate for clinic service and distributed among 7 clinics.
85 were able to pay and sent to their own physician.
18 preferred to see an optician.
30 were found on examination not needing treatment for eyes.
10 would not cooperate and treatment was deferred.
18 were under treatment or observation at end of school year with diagnosis and correction deferred.
10 were found to need general medical or neurological treatment and refraction was deferred until result of such treatment could be determined.
12 were advised to arrange for operative treatment.

Corrections effected:

273 corrections were made and glasses secured.
9 were given operative treatment.

School recommendations:

210 were referred back, after correction, to full time eye work in the regular class.
63 were referred, after all possible correction, to the sight-saving classes.
21 were referred, after examination and any suitable treatment, to the classes for the blind.

In the plan for continuing the service during the next school year it was arranged jointly by the Commissioner of Health and the Director of Special Classes under the Board of Education that school physicians in making the vision tests during the routine examination of pupils should list all with vision below normal to be referred to the Director of Special Classes, who should further classify them, referring all pupils with vision of 20/70 or less in the better eye for the specialized service of this society. All pupils with vision better than 20/70 were to be referred to the service of the school nurses.

As the staff of school physicians was this year increased by the addition of fifty men to give full time to physical examination of school pupils, we were able to serve a much larger number of pupils.

Tabulation of pupils referred, treatment secured, corrections effected and school recommendations made in school year September, 1922, to July, 1923:

102 schools referred 440 pupils this year. Of these 440 pupils

276 were examined, refraction tested, or otherwise treated, given glasses and recommended back to regular classes for full time work.

53 were found needing only such treatment as could be arranged through the school nurse and were so referred.

13 were found not cooperative in arranging for treatment.

5 were found to be mental defectives with normal vision.

1 was found to be a cardiac patient with normal vision.

1 was found to be deaf rather than to have visual defects.

8 moved before treatment was satisfactorily completed.

69 were recommended for sight-saving class work.

6 were recommended to the classes for the blind.

The detailed report of this joint service by three cooperating agencies, covering a period of three school years, embodies two very definite fields of service: (1) sight-saving treatment for a large group of children of school age, resulting in greatly improved vision in much more than sixty percent of the group; (2) the establishment of a system of special classes appropriate to securing to partially seeing pupils an educational opportunity equal to that afforded seeing pupils.

It will be seen that in the three years of this service 1721 pupils were referred for examination; that it was possible to improve vision in 815 and refer them back to the regular class room from which they had been sent for examination as unable to do the required work because of a suspected eye defect. For the 151 referred to the sight-saving classes after examination and all suitable treatment, much was done to prevent further progress of high refractive errors, to arrest disease that might further impair sight, and to regain vision through operative measures.

SUMMARY OF PUPILS EXAMINED, CORRECTIONS EFFECTED AND SCHOOL RECOMMENDATIONS MADE IN THREE YEARS

Year	Number examined	Defects found	Corrections made	Referred to regular classes	Referred to sight-saving classes	Referred to classes for blind
1920	681	336	6	5	1	0
1920–1	248	221	178	74	18	5
1921–2	352	294	282	210	63	21
1922–3	440	372	349	276	69	6
	1721	1293	815	665	151	32

A very valuable feature of this work, however, does not appear in these summaries, but is found incidentally in the education of the parents who are persuaded to use "drops" for the testing of eyes previously "fitted" without such aid but with glasses which did not help. It is found in the story of a lad who wore his cap in school to protect his eyes from the ordinary light of the school room and in whose case it was found that an injured eye, neglected because not painful at first, was affecting the sight of the uninjured eye. In this case the good eye was saved with part vision by emergency treatment which had to be urged upon parents who could not realize the threatening danger. It is found in the case of a young girl suffering from birth with congenital cataracts for which no operation had been allowed because the physician who had been consulted naturally was not willing to "guarantee" a cure. In this case, when permission was reluctantly granted to operate on one eye at a time, the cataracts were successfully removed and glasses fitted, and a previously blind child was thus returned as a seeing pupil to a regular class room.

Sight-saving classes for such pupils were established in five of the school buildings, two such classes being established in each of three of the buildings.

It is appropriate here to speak of the development of sight-saving classes for pupils who are not blind, but are so seriously handicapped by limited vision as to be unable to make progress in the regular class room.

In the growth and development of state institutions for the education of the blind in this country, it became a practice to enroll pupils who were known as "border-line" pupils because they were neither blind nor seeing. Because of their difficulty in reading the print of the usual textbooks in ordinary school work it was assumed that they must abandon for reading the little vision they had and use the fingers in the tactile system of reading. But this assumption was not according to nature; it developed that these pupils would invariably strain the little vision they had in trying to read with the eyes the raised points of paper which the blind feel with the sensitive finger tips. Many superintendents of these institutions assert that such pupils often lost the little sight they had through this persistent practice.

The establishment of special classes for these pupils in the public schools, with such equipment as would relieve their poor sight from undue strain, was therefore a real sight-saving service to this class of pupils.

Because of the necessity for much individual work and of the variety of grades represented in the group, the sight-saving class is limited to an average of twelve pupils; the expense thereby entailed is borne in Illinois by the state, under an act passed at the time of establishing classes for the blind in the public schools, the excess per capita being a normal amount and inconsiderable in proportion to the advantage gained in eliminating repeaters in the grades, and in holding in school for a longer period pupils who otherwise would become discouraged and join the ranks of unskilled workers for whom there is so limited a future.

Pupils assigned to these classes are in no sense segregated from the pupils with normal sight in the school, except for the preparation of the lessons, in which they require books with large print, relief maps, adjustable desks which also can be moved near the window or blackboard, and typewriters for written work. Pupils go to the regular class room to recite with the grade in which they are enrolled; take part in all general exercises in the building; and graduate with full honors on the merit of the work accomplished, equally with the pupils who have normal vision. Sight-saving classwork is frequently of assistance to pupils who have recovered normal vision but are retarded in their work owing to their absence while under treatment for a visual defect and who therefore justify personal attention while making up such lost work.

The Illinois Society for the Prevention of Blindness has continued the

service of arranging for eye examinations, correction or treatment of visual defects, and recommendations as to school assignment by the examining physician.

Cases are referred to us from various sources and by various agencies, chiefly from the schools by the visiting doctors of the health department, the principals, the teachers, and the visiting nurses. If, in the preliminary tests by school physicians, teachers, or nurses, the vision of the child is found lower than normal, or if he is found unable to do the required eye work in school he is referred to us and we through our workers or through other agencies see that he is properly examined by an expert either in a clinic or privately. After thorough examination and correction of visual defect or disease of the eyes, the examining physician is asked to recommend school assignment on the basis of the amount of vision secured and safety to the sight of the patient. Pupils are assigned to (1) regular class work, (2) sight-saving class work, (3) classes for the blind.

A record of the vision test, diagnosis, prognosis, and school recommendation as well as recommendation for any further advised treatment is returned to the Department of Health and to the Board of Education. Transfer to sight-saving classes or classes for the blind is made by the Board of Education, and pupil escorts are provided for pupils not able to travel alone. The extent of the increase of this cooperative service with the Department of Health and the Board of Education, Division of Special Classes, is shown by the following numbers of cases referred to us for such service:

School Year 1920–21	248
1921–22	352
1922–23	440
1923–24	1206
1924–25	1310
1925–26	1189
1926–27	1459

If boards of education realized the great expense incurred in providing room and teaching service year after year for repeaters in the grades whose eyes are their educational handicap, and if it were known with what comparatively simple corrective treatment these pupils are frequently relieved of their handicap and put into line for promotion with the prospect of good vision for the balance of their school years, the boards would certainly conclude that attention to this particular health condition of school pupils is a wise economic measure.

If the state may require school attendance for a period of from ten to twelve years it should have the authority to determine whether hearts, eyes, ears, minds, or other physical endowments are equal to the strain without adjustments and specialized treatment. We believe it to be the next step in health for its citizens that Illinois should fall into line with the majority of the other states, which have acknowledged their obligation and privilege to thus provide for the future strength of their citizenship.

The Illinois Society for the Prevention of Blindness thinks that the Board of Education in that state, in some form of cooperation with health boards, should be empowered by legislative enactment to expend money for the examination of the eyes of school children to discover defects that may handicap their school work.

Furthermore, boards of education should have power to employ expert assistance to correct such defects in those who are financially unable to pay for such service.

It certainly is not the duty of the medical profession, any more than it is the duty of any other particular class of society, to render gratuitously this important service to the community. The expense of it should be borne by all, but expert practitioners in this field could and should do much in the way of direction and assistance.

The state of Illinois is backward in looking after its handicapped citizens. More than half the states in the union have laws requiring medical inspection of schools, not of eyes alone, but of ears, throats, teeth, hearts, lungs, etc., whereas Illinois is not in the list of those that have such enlightened laws.

But criticism to be of most good should be constructive, and in closing I venture to offer this suggestion: Why should not the Board of Education of Chicago be empowered to establish a number of eye clinics in suitable parts of this great city and employ at a reasonable salary trained ophthalmologists to examine and correct eye defects of those school pupils who are entitled to free service and do not care to go elsewhere for such attention. Such clinics, I should say, need not number more than ten or twelve, which with the eye clinics already in operation would probably supply the need.

They could be operated in conjunction with ear, nose, throat, and dental clinics, and possibly could be held in certain school buildings, thus reducing the expense to a minimum. The expense of such an undertaking would be comparatively small, the good accomplished would be incalculable.

Such a plan is already in successful operation in Cleveland, Ohio, and in New York City, although in the latter place I have heard that the ubiquitous politician has begun to meddle with the scheme, a danger we always have to face.

In developing this survey of finding and correcting eye defects in early school years, the Illinois Society for the Prevention of Blindness has had the most cordial support of the officials of the Department of Health and in the Board of Education, and has thereby been able to carry out a conclusive demonstration of what such joint effort may mean both in health and in educational benefits to the school population.

The possibility of permanent benefit through such service is beyond question, and should speed the time when the entire field of physical defects and handicaps in school pupils will be a matter of concern to the state and their correction will be considered as important as progress of the pupil in book knowledge.

122 South Michigan boulevard.

AN OPHTHALMOLOGICAL CLINIC IN PARIS

G. ORAM RING, M.D.

PHILADELPHIA

In describing his visits to the clinics of Drs. Morax and Magitot, at the Hôpital Lariboisière and the Hôpital Tenon, respectively, the author pays special attention to the technique of cataract extraction as witnessed in Paris, and to Magitot's study of retinal arterial pulsation with the ophthalmodynamometer. Read at the October meeting of the Section on Ophthalmology of the College of Physicians of Philadelphia.

Some accounts of the clinics of two of the most distinguished French ophthalmic surgeons may be of interest to American readers. Dr. Victor Morax, surgeon in chief of the ophthalmic department of the great Hôpital Lariboisière, and Dr. Magitot, ophthalmic surgeon to the Hôpital Tenon, left no stone unturned to make our stay one of delightful memory, and generated a spirit of comradeship which will draw us inevitably back to them and to the incomparable capital of the French nation, of which they form so distinguished a part.

Dr. Morax, dean of Paris ophthalmic surgery, masterly in technique, graciously courteous, magnetic in control, a veritable dynamo of energy, surrounded by a rapt audience of admiring assistants and visiting surgeons, gave the impression of being absolutely physically fit at the close of what to most men would have been an exhausting morning. The occasion brought to my mind a classic line from the great Victorian, in describing another art in the well known toccata of Baldassare Galuppi: "I can always leave off talking when I hear a master play."

Of our summer vacation periods, July is the month for such a visit, as August invariably finds the chiefs on rest and pleasure bent.

The operative period upon each of Dr. Morax' clinic days (Tuesday and Thursday) lasted from 9.30 until about 12 noon. The numerical average was about ten operations. The list is posted upon a bulletin board at the entrance of the eye pavilion and also upon a blackboard in the operating room. All operations were performed by the chief, except enucleations. These were left until the end and performed by the assistant surgeon. Practically all enucleations are done under local anesthesia. Indeed, in a return visit to the clinic during late August, when Dr. Morax' chief assistant Dr. Hartmann was in charge, the latter enucleated an eyeball for retinal glioma in a child less than four years of age under local anesthesia, the fellow eye having been removed by a similar method two years earlier. Dr. Hartmann advised me that he questioned whether general anesthesia had been used in the clinic more than once in the previous year.

At the close of each operation, a dictation embracing all important details is immediately made by the surgeon to one of his nurses. This serves the double purpose of making at first hand an important hospital record and clarifying details to the visiting surgeons in case each step was not perfectly followed.

Duke Elder has said, in his valuable little volume just published, that there is no subject in the whole field of ophthalmology which is more rapidly changing than that of the normal and pathological lens.

The slit lamp in the study of lens morphology, the investigation of the biochemist into its biology, the researches in embryology and in serology, and those representing the ingenuity of the surgical craftsman all combine to infuse into its study a fascination second to nothing in ophthalmology.

The extraction of the opaque lens itself, until the mature development of the other subjects mentioned, will continue to maintain the position that the late Dr. Goodman used to claim for

it, that of the most dramatic procedure in surgery.

In our American preparation for the extraction, it is the almost universal custom to have the patient in bed at least the day before, and to have him brought to the operating room on a stretcher, unless we elect to operate upon the bed. With us, also, one or two previous facial and nasal preparations have usually been made, but in most of the foreign clinics I have visited, the patient walks into the clinic room partly clad in street garb, the facial and eye preparations being made by the assistant just before the operation. The preparations consist, in the Paris clinic, of a careful syringing of the lachrymonasal apparatus and a cleansing with soap and water followed by the application of a solution of cyanide of mercury 1 to 5000 to the face and eyes. The same strength of solution is used by the operator immediately preceding the making of the incision, cocaine having been previously instilled. The cannula of the syringe is carefully inserted under the upper lid and the eye thoroughly flushed.

A separate set of instruments is utilized for each cataract operation. They are kept in a metal case and are subjected to dry sterilization.

If the eye looks normal, I believe it is not the custom to make a preliminary bacteriological study, whereas I think we are accustomed in every case to have a culture taken the previous afternoon, the report to be in our hands some hours before the time scheduled for operation.

I did not notice preliminary intranasal preparation.

The assistant injects the lids after the usual method and one deep orbital injection is made in the effort to anesthetize the ciliary ganglion.

The usual strength of novocaine is two percent, although Duke Elder advises four percent. The usual position of the deep injection is in the infratemporal region. In the Paris clinic the needle is thrust through the lids.

These details are not noted by way of criticism, but simply as illustrating the difference of methods.

Each of us has developed from long observation and experience a definite judgment as to the safest method of procedure in the extraction, and probably each has decided how his own opaque lens is to be removed, if the gods so afflict him.

With the perfection of technique manifested by Dr. Morax, it would seem that any recognized method could be carried to a triumphant success. However, he elected but two methods in the performance of eight extractions (four on each of the two days). The first two were simple extractions with a conjunctival bridge. The capsule in each case was opened with a cystitome. Soft cortex was extruded in the usual manner. Dr. Morax does not irrigate the anterior chamber and has no enthusiasm for the procedure. The iris is gently but definitely replaced and pilocarpin instilled. The second method was the one so generally in vogue, the combined extraction, always with a liberal conjunctival flap.

In each of the two methods used Dr. Morax was equally at home, and he evidently desired to demonstrate each technique to the visiting group of surgeons.

He does not choose to perform the intracapsular operation and for it he has no enthusiasm.

In this connection, however, it is well for us to keep in mind Knapp's investigation on the late end results of his intracapsular technique. In Knapp's very capable hands the removal of the posterior capsule did not favor the incidence of degeneration. On the other hand, Thomson's study of a considerable group of intracapsular extractions, where the Smith technique had been practised, showed that in 50 percent of the cases vision began to fall after some years.

Duke Elder has very properly said that "the value of an operative procedure cannot be usefully assessed on the results of the most skillful operators, but must stand or fall by the results attained by the surgeon of average ability."

In one case which was presented for extraction, the operation was post-

poned because of the obvious need for conjunctival treatment. The opposite eye had been lost by infection in the hands of another surgeon.

If I am conversant with the habit of most of our American surgeons, I should say that one eye having been lost we should prefer to precede the extraction of the remaining eye with a preliminary iridectomy. An expression of this judgment to Dr. Morax brought forth the kindly rejoinder that with the latter procedure there were two changes of infection. The decision of so important a question will naturally resolve itself into a judgment based upon long experience. With careful culture studies my own experience would favor the preliminary iridectomy.

With reference to the conjunctival bridge flap, you will be interested to know that Dr. Magitot used it to the exclusion of all other methods. When Dr. Frederick Krauss, some months ago, urged the bridge flap before this section, my first reaction concerned the difficulty in making an iridectomy if such were needed, having in mind the usual upward position. Dr. Magitot's response was "Why not at the angle of the bridge?" A special instrument is used by Drs. Morax and Magitot to lift the bridge during any required manipulation.

Dr. Shannon, who recently visited Moorfields, tells me the minute peripheral iridectomy is practiced there as a routine. During my visit some years ago to the clinic at Wurzburg, the late Dr. Hess enthusiastically practised the same procedure. It was not done in any of the cases at the Paris clinic. Dr. Magitot injects a few drops of a 1 to 1000 solution of adrenalin chloride preparatory to all of his extractions. In addition to the blanching, he thus gets a satisfactory pupil dilatation without mydriatics.

Dr. Magitot's operations are performed on Monday and Wednesday, so that the student or visiting surgeon can take advantage of the work of each surgeon.

In one of Dr. Magitot's extractions, an exceedingly difficult one, in a glaucomatous eye in which a trephining had previously been done, the anterior chamber being exceedingly narrow and vitreous presenting immediately following the extraction, the bridge flap was an undoubted comfort to the operator, and rendered less hazardous the stitching of the inner angle through which the vitreous projected.

Posterior capsulotomy was done most skillfully by Morax but with the small, short Graefe knife, insertion being made just behind the limbus. The V-shaped capsulotomy of Ziegler so generally in use in America in all suitable cases was not performed. I am inclined to feel that the Ziegler technique is more difficult to acquire but that it will eventually rank as the classic procedure.

Chronic dacryocystitis was treated on two of the three operating days that I attended the clinic, by the radical bony resection procedure, which rather closely followed that of Dupuy-Dutemps. After skillful and rapid exposure of the sac on the one hand and the mucoperiosteal lining of the lateral nasal wall on the other, both were carefully incised and made into one cavity by stitching the incised edges with catgut. No operation which is done with great dexterity impresses one as at all difficult, and this was strikingly true of the finished technique manifested by Dr. Morax in the accomplishment of this procedure. It is one of the misfortunes of surgery that we cannot all agree as to one method which should replace all others in our effort to accomplish a definite purpose.

West, Mosher, Yankauer, Toti, Dupuy-Dutemps, Morax, Patterson, Benedict, Barlow—of these distinquished names each represents some modification of a valued procedure. The very favorable results achieved by the Mosher-Toti technique so carefully outlined by Dr. Spaeth must strongly commend the method. It seems to me, however, that a good deal depends upon the exact purpose for which the operation is performed. If the purpose is to rid the eye of any danger of infection, having in view a subsequent opening of the eyeball, as for example a cataract operation, then I would personally much rather depend upon a technically perfect

sac excision, since in this decision our judgment has many times confirmed the opinion of so eminent an American operator as Dr. de Schweinitz.

If no operation upon the eyeball is contemplated and we have especially in mind the cessation of epiphora, then one of the resection methods may be considered.

The advancement operation of the Morax clinic consisted of a free exposure of the tendon, insertion of an upper and lower silk suture, cutting away the upper and lower third of the tendinous insertion, and leaving a central attached portion of the tendon, after which the stitching was completed in the usual way.

Two eyes in the same patient were operated upon for chronic glaucoma. In each eye there was a congestive exacerbation. The method selected in each case was the Elliot trephine operation with complete iridectomy through the trephine opening.

Dr. Magitot's interest in the phenomena of retinal artery pulsation and his association with Bailliart in the elaboration of a method for its study by means of the ophthalmodynamometer are well known to you. His discussion of the subject before the Washington Congress and his publication of two articles in the American Journal of Ophthalmology have been supplemented by routine use of the method in his clinic. He hopes to present in greater elaboration the results of further study at the International Congress in 1929.

To use Magitot's own words, "the principle of the method consists in applying to an eye, the tension of which is known, pressure with a small instrument which is graduated in grams. By this means an arterial pulse is produced on the disc." At the precise moment when the pressure of the blood column is balanced by the pressure of the eye we know the diastolic pressure of the retina, provided we can translate the reading into millimeters of mercury. This Magitot and Bailliart have made possible in a chart which accompanies the instrument.

The latest model, only recently completed, has for its purpose the measurement of the maximum and minimum retinal arterial pressure. Either the direct or indirect ophthalmoscopic method may be employed.

If the direct method is selected, the examining surgeon uses the pressure gauge with one hand and the ophthalmoscope with the other. If the indirect method is used, an assistant controls the ophthalmodynamometer. Dr. Magitot prefers the latter method and uses the small Gullstrand hand ophthalmoscope, which he feels if skillfully used will regularly give results equalling those of the larger instrument.

The eye is anesthetized in the usual way and the apparatus gently pressed over the position of insertion of the tendon of the external rectus. Pressure is made until the appearance of the first arterial retinal pulsation. The free needle remains immovable in front of the figure indicated by the apparatus at the moment of appearance of the pulse. The needle is then put back to zero, the pressure continued, and a reading made just at the disappearance of the retinal pulse. The first reading records the diastolic pressure, the second the systolic pressure. The translation of the readings into millimeters of mercury is then made by referring to the diagram of Magitot and Bailliart and the arterial retinal pressure recorded in phraseology corresponding with that used in the ordinary readings with the Schiötz tonometer.

It is suggested that two or three trials be made in taking the pressure, and that a short interval of time, five minutes, between observations be left in order that the retinal circulation may be permitted to return to its initial condition.

It is not at all my purpose to review the subject in detail, but to recall to your recollection that, "in order that pulsations may appear in the arteries or veins of the disc, it is necessary that the pressure exerted by the ocular tension on the wall of the vessel should balance the pressure of the blood column. If pressure is continued until the last pulsation ceases, we have reached the limit of the greatest arterial pressure, that is to say the "systolic pressure."

According to Magitot, the diastolic arterial pressure is 30 to 35, the systolic from 70 to 80 mm. The normal systolic brachial pressure is 140 and the diastolic 70 mm. The ratio between the local and general pressure is therefore as 0.45 is to 1.

The variations of these findings as pointing to hypertension of the spinal fluid; the probability of oncoming vascular lesions; its application to the study of glaucoma, the latter due in Magitot's view to an inflammation of the choroid; and the danger signal of the spontaneous arterial pulse constitute a few of the subjects Magitot will elaborate.

Investigators in this field are not by any means in complete agreement. As in all the arteries of the body, so in the retina, a pulse is always present which extends with progressively decreasing amplitude down to the capillaries. The point at which pulsation is first noted cannot be interpreted, according to Duke Elder, as denoting any definite end point in the cardiac cycle, but rather as an index of the power of magnification of the instrument utilized.

Baurmann, working along lines similar to those of Magitot, finds the local diastolic pressure 55.1 to 60 mm. Duverger and Barré record the systolic as high as 100 mm.

It is claimed, however, by Duke Elder that the only unequivocal method of measuring the actual pressure in the retinal arteries is by insertion of a manometer into the lumen of the vessels themselves. By this method he found the pressure (cat) 64 and 88 mm.

There are, according to Duke Elder, incidental sources of error depending on the construction of the ophthalmodynamometer, on the amount of force used, on the manner of exerting it, and on the nature and condition of the eye and arteries. The subject is a decidedly complex one, and I introduce it especially to consider Bailliart and Magitot's latest pressure gauge and to express my admiration for a scientific investigator who has rapidly forged to the front rank of French ophthalmology.

135 South Seventeenth street.

INTRAVENOUS INJECTIONS OF MERCUROCHROME IN SUPPURATIVE EYE CONDITIONS

J. N. Duggan, D.O. (Oxon), F.C.P.S., Major I.M.S. (Hon.)

BOMBAY, INDIA

The author states the results of intravenous administration of one percent mercurochrome solution in a dosage of fifteen c.c. for postoperative suppuration, chronic iridocyclitis, and a single case of traumatic cataract.

Mode of use.—The clinical action of mercurochrome 220 soluble was tested in suppurative and nonsuppurative conditions of the eye, in twelve patients with fifteen eyes (three patients bilateral) at the Sir C. J. Ophthalmic Hospital, Bombay, India. The administration of the drug was intravenous, the dosage being fifteen c.c. of one percent solution in freshly distilled water. It was noticed that men tolerated the dose better than women and that a rapid tolerance in general was soon established, the reaction to subsequent doses being much milder than to the initial. Doses were never repeated earlier than seventy-two hours. We have never had occasion to exceed three doses in any single patient. Subconjunctival injections of mercury cyanide (1 to 2000) supplemented the treatment in a few cases.

Late suppurative cases.—Good results were obtained in five postoperative cases of internal and external suppuration (of endogenous and exogenous origin) setting in about the sixth day after operation, a check on the inflammatory process being noticed almost immediately after the very first

dose. It was not found necessary to give more than three doses of 15 c.c. each for complete resolution. Of the five cases treated, four were discharged completely cured with useful vision and one is still under treatment.

Early suppurative cases.—Great improvement resulted in two cases out of four of early suppuration occurring within two days. Both were discharged completely cured. As the other two showed no signs of improvement, the eyes had to be removed.

Nonsuppurative trauma.—Its use in a single case of traumatic cataract with vitreous haze, iridodonesis and iridodialysis, hyphema, and m.b. vision was very encouraging. The patient went out of the hospital with eight feet vision, the eye having quieted down admirably, leaving posterior central lenticular opacity.

Chronic inflammation.—Investigations on three cases of chronic iridocyclitis are convincing enough that mercurochrome materially helps a great deal in effecting an early cure in suitable cases.

Note. In the thirteenth patient (sixteenth eye) mercurochrome was used locally every two hours in two percent strength, and this was also done in two other cases of hypopyon ulcer; but without any success.

Reactionary phenomena.—Malaise, chill amounting to a rigor with rise of temperature, nausea, and vomiting, diarrhea, and exhaustion are constitutional signs occurring in succession soon after the injection and disappearing within about forty-eight hours.

(1) Malaise, i.e., a general feeling of illness, is the first sign to appear.

(2) Chill, sometimes amounting to actual rigor followed by rise of temperature, was noticed within about an hour in a majority of cases with the first injection and lasting from four to six hours. The temperature has never risen over 104°.

(3) All patients in general feel a nauseating sensation. Vomiting occurred in eighty percent of cases at the first injection only.

(4) Diarrhea occurred in seventy-five percent of the cases. It is interesting to note that all the four female patients treated exhibited it in a very severe form, dysenteric in character with tenesmus and restlessness. No difficulty was experienced, however, in checking the diarrhea, which yielded to the general sedative and demulcent line of treatment. Symptoms in these cases were so severe that we did not venture to repeat the dose in these four cases.

(5) Exhaustion was seen in some cases on the day following the injection.

(6) Mercurism in the form of mild stomatitis occurred in twenty percent of the cases.

(7) The permeability (diffusion) of mercurochrome through the system, as evidenced by the appearance of chrome color in the vomit, urine, and stools, seems to be rapid and may be a source of alarm to the patients. Seventy-two hours was the maximum period noticed for complete elimination, and so subsequent injections could be given quite safely after this period.

Conclusion.—In conclusion, I shall not hesitate to state that mercurochrome does good service to the ophthalmologist in all cases of late infection while it enables him to hasten the cure in nonsuppurative inflammations of the eye. But no definite opinion could be formed of very early infections.

(Note.—Additional details as to the use of this drug may be found in an exhaustive article entitled "The sterilization of local and general infections," by Hugh H. Young, Journal of the American Medical Association, 1926, volume 87, pp. 1366-1373.)

Sir C. J. Ophthalmic Hospital.

NOTES, CASES, INSTRUMENTS

PRIMARY SPASM OF THE SUPERIOR OBLIQUE MUSCLE

MORTON E. BROWNELL, M.D., F.A.C.S.
WICHITA, KANSAS

A search through the Ophthalmic Year Books of the past ten years and such other researches as have been available to me have failed to bring to light a report of even one case of primary spasm of the superior oblique. In a conversation with Dr. Walter R. Parker and Dr. W. L. Benedict, both of these observers said that they had never seen or heard of a case. In Posey and Spiller mention is made of the fact that Desmarres had a clonic spasm of the right superior oblique, but I can find no mention anywhere of a case with tonic spasm. In the light of all this I have made a most careful study of the case herein described in order that I might at least be sure in my own mind that this case was really one of primary spasm. Being so convinced I wish to report the case as follows:

Case report.—Mr. W. B. C., aged 23 years, American, white, single, occupation bank teller. Personal history, usual children's diseases. Had appendix removed three years ago. Otherwise negative.

The patient came to my office May 14, 1927, complaining of dizziness, seeing double on looking down, and inability to judge distances. He said that on December 24, 1926, in a fight he was hit several times over the right eye by a policeman's billy. He was unconscious for several days following this, and in the hospital for four weeks. He apparently recovered from the injury without any untoward effects, and was surprised on April 1, 1927, when the right side of his face became swollen above and below the eye. He then entered the Halstead Clinic at Halstead, Kansas, where he was treated for acute frontal sinusitis. Under treatment this process subsided but left him with the diplopia, dizziness, etc. He was sent to me from the Halstead Clinic for eye diagnosis.

External examination.—The right eye showed a moderate catarrhal conjunctivitis but there was no regurgitation from the sac on pressure. The eye was very slightly proptosed. The external examination of the left eye was entirely negative, except for a slight conjunctivitis. The pupils were equal and round, and reacted well to direct and consensual light and in accommodation. The right eye, under cover test, showed a marked primary deviation downward when fixing with the left eye; but the left eye showed no secondary deviation on fixing with the right eye, although with the phorometer we found six degrees of left hyperphoria. On looking downward and fixing with the left eye, the right eye moved with extreme rapidity and to such an extent that the cornea seemed buried in the fornix below.

The diplopia fields showed a vertical diplopia, increasing as the patient looked downward, with the image seen with the left eye increasingly lower than the false image, especially on extreme depression and adduction of the right eye. In judging the position of objects in the field of action of the affected muscle when the left eye was covered he would undershoot the mark, in the manner typical of such a spasm. The vertical diplopia became less as the right eye was abducted, and there was very little lateral diplopia on extreme depression and adduction, while the vertical diplopia had entirely disappeared. The total excursion of the right eye was markedly increased in the vertical meridian, and about normal in the horizontal meridian. Unfortunately I did not have a tropometer, but with the perimeter the excursion of the left eye in every direction was found normal as checked with my own eye

and that of my assistant. So there was no apparent accompanying paralysis or spasm of any other muscle in either eye.

The vision in the right eye was 20/60 and could not be improved with glasses. The vision in the left eye was 20/20, and again there was no refractive error. Ophthalmoscopic examination of the right eye showed the media to be clear, nerve head round, physiologic depression shallow, lamina cribrosa not seen, rings blurred throughout, disc quite markedly hyperemic. The retinal vessels were perfectly normal in caliber, course, and contour, although there was a slight increase in the perivascular stroma in the vessels near the disc. The retina was slightly edematous and the foveal reflex was indistinct. The ophthalmoscopic examination in the left eye was negative.

Treatment.—The patient was given salicylates over a period of six weeks. He was also given a four degree prism base up before the right eye, and a two degree prism base down before the left eye. This, he later reported, relieved his eyes enough to enable him to go on with his work. He was referred for a Wassermann test, which proved negative. X-ray examinations of his teeth and sinuses were negative. He refused lumbar puncture. The rhinologist reported the frontal sinus negative, but a streptococcic infection was found in the posterior ethmoids on the right side. Because we advised curetting the ethmoids the patient was scared away, and he has not been seen since July 10, 1927.

It is, as far as I am concerned, a very hard case to diagnose as regards etiology. I have thought that either the condition was due to the ethmoiditis and direct extension to the orbit, thus explaining the low grade neuroretinitis; or it seemed to me possible that there had been a small fracture at the sphenoidal fissure, causing a callous formation even at so late a date after the injury. I am sorry that the case left my observation before I could arrive at a more intelligent opinion.

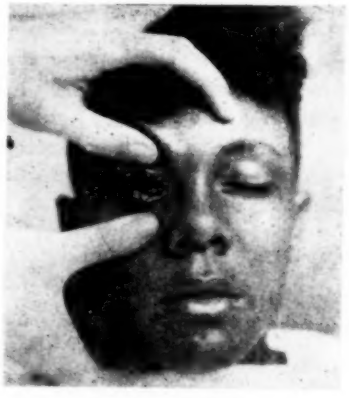
1019 First National Bank building.

SYPHILITIC GRANULATIONS OF THE CONJUNCTIVA

EVERETT L. GOAR, M.D.

HOUSTON, TEXAS

The following case is reported because the condition is rather rare and the diagnosis presents some difficulty. A negro boy of seventeen years appeared at Hermann hospital, September 13th, with the history that five weeks before the lids of both eyes had become swollen. The swelling on the left side had disappeared within a day or two, but on the right side it had persisted and had become constantly worse. The upper and lower lids of the right eye were intensely swollen and the patient could not elevate the upper lid. Upon everting the lids a great number of enormous granulations were noted, springing from the palpebral conjunctiva of both lids as well as from the ocular conjunctiva. Some of these tumor-like masses were



Goar's case of syphilitic granulations of conjunctiva.

ten or twelve millimeters in length, several millimeters high, and they were flattened or rounded on top—much larger than the follicles seen in folliculosis, trachoma, or vernal catarrh. There was a profuse mucopurulent discharge. The preauricular gland was moderately swollen. It was necessary to use retractors to expose the cornea. This was clear except for a very small central ulcer which did not spread. One small granulation was firmly attached to the cornea above.

There was no history or evidence of a primary lesion and no eruption, but a few small areas of alopecia areata were found on the scalp. These were of recent origin. Sections of the masses showed the characteristics of granulation tissue. A strongly positive Wassermann test was obtained and the first dose of neoarsphenamin caused a very marked improvement. The masses had almost disappeared within a few days after a second dose.

In a limited survey of the literature I have not found this condition described. All text books describe syphilitic ulcers but I can find no mention of exuberant granulations due to that disease. The prompt disappearance of the masses following antisyphilitic treatment, when they had resisted other forms of therapy for several weeks, makes it almost certain that we are dealing with one of the rarer manifestations of syphilis, probably in the secondary stage.

1300 Walker avenue.

AN UNUSUAL CLINICAL PHENOMENON OCCURRING IN A CASE OF IRITIS

HARRY S. GRADLE, M.D.

CHICAGO

During the course of a case of iritis that presented no other unusual clinical features, there appeared a condition that was markedly out of the ordinary. This can best be described by a condensed review of the clinical record.

A 43 year old man appeared on August 8 complaining that the left eye had been sore and red for four days. The right eye was essentially normal. There was considerable edema of the left eyelids and a rather intense ciliary injection was present. The lower and nasal quadrants of the cornea were slightly edematous and the posterior surface was heavily plastered with fibrin. No formed posterior precipitates were present. The beam of the slit lamp was moderately visible in the anterior chamber and in it could be seen numerous cells in slow motion. The iris was swollen and engorged. There was a fairly dense pigmented posterior adhesion at axis 250° and there was considerable iris pigment dotted on the anterior capsule. Vision was 18/200. Tension was plus 1, but was reduced rapidly to subnormal by the use of adrenalin once. At the same time, the corneal edema disappeared. The patient was admitted to the hospital, where a thorough search for possible etiological factors resulted in the finding of six infected tooth roots. These were extracted as rapidly as possible.

Three milk injections of 10 c.c. each resulted in a very rapid improvement of the iritis, so that the patient was discharged from the hospital in about one week. The usual local treatment of atropin and heat was continued. On August 27 the eye was practically pale. The fibrin on the posterior corneal surface had contracted into the form of a few ill-defined posterior precipitates. The anterior chamber was much clearer and contained many less cells. Six gelatinous nodules had begun to develop in the iris near the pupillary margin and these increased in size very slowly. Local treatment was continued and sodium iodide was given internally. The change in condition from here on was very slow.

On October 1 the eye was pale but flushed slightly on manipulation. The posterior precipitates were practically gone and the anterior chamber was nearly clear. Two of the gelatinous nodules which had reached a diameter of about 0.7 mm. had been extruded by the iris and were adherent to the posterior surface of the cornea. They were essentially the same in shape and size as when they lay within the iris tissue. Two nodules that still lay within the iris were in the process of being extruded. It seemed as though they were being forced forward by pressure from behind, and the iris fibers that lay within their path were being pushed to one side or the other. There was no definite bed in which these nodules lay, and the more or less plastic iris tissue closed in behind them.

Fifteen days later, three nodules were adherent to the posterior surface of the cornea, and the three nodules remaining within the iris were shrinking and disappearing. At no time were the nodules found free in the anterior chamber, nor at any time was motion of the nodules discernible as the eye moved. Under 105 times magnification, the nodules seemed to have shrunken after having been extruded and soon presented a granular appearance. The consistency, which when within the iris seemed to be gelatinous, seemed to have increased so that the nodules appeared firmer.

The nodules gradually decreased in size, lost their rounded contour, and eventually became flat discs with crenated edges, closely adherent to the posterior surface of the cornea. There has been no change in their appearance since that stage was reached.

This was a case of iritis due undoubtedly to infected tooth roots, as all other possible etiological factors were investigated with negative results. The development of the gelatinous nodules in this type of iritis is in itself an unusual feature. The extrusion of the nodules from the surface of the iris into the anterior chamber, where they were carried to the posterior surface of the cornea, to which they became adherent, is a most unusual phenomenon. It would seem that the nodules, after their formation, acted as a foreign body within the iris, and hence were forced out into the anterior chamber between the iris fibers. Owing to their undoubted sticky nature, they became adherent to the cornea at the first point of contact. Here they seemed to lose in substance until nothing but a shell was left, which was plastered tightly against the endothelium. This, too, shrank as shown by the crenation of the edges, and in the course of time will undoubtedly disappear.

(This patient was seen again on December 17th, and no trace of the nodules, either on the cornea or in the iris, was longer to be seen.)

58 East Washington street.

AN EPITHELIAL NEVUS

HARVEY D. LAMB, M.D.

SAINT LOUIS

S. M., a girl of fifteen years, consulted Dr. N. R. Donnell because of a small growth on the caruncle of the right eye. This growth had been noticed for several years by the parents and was apparently becoming slowly larger. It was excised by Dr. Donnell after the injection of a few drops of two percent novocain. The excised piece of tissue was roughly spherical and about two mm. in diameter. It was fixed in ten percent formalin, imbedded in paraffin, sectioned, and stained with hematoxylin and eosin.

Surface epithelium covers the entire circumference of the growth, except for the small area where the section was made. This epithelium is very thin and consists of three to five layers of flattened epithelium. In places there are downgrowths of epithelium of varying depth and breadth. Some of the deeper epithelial downgrowths show mucous degeneration.

The growth is almost entirely composed of nevus cells. Toward the periphery of the growth, these cells are generally larger, with large round or oval lightly staining nuclei; whereas over the central part of the growth the nevus cells are for the most part small and their irregularly shaped nuclei stain very darkly. The latter are evidently degenerated nevus cells. In the periphery, the nevus cells have mostly an alveolar arrangement. Just beneath the covering epithelium over the summit of the growth, there are isolated small groups of pigmented nevus cells. The epithelium here, apart from the groups of pigmented nevus cells, shows in its basal layers in places a loosening of the cells and a transformation from flat epithelial cells to nevus cells; a small number of fine grains of pigment are present in some of these new-formed nevus cells. On one side near the base of the growth, the formation of nevus cells from surface epithelium can be studied thoroughly. Here dense masses of nevus cells lie just beneath the

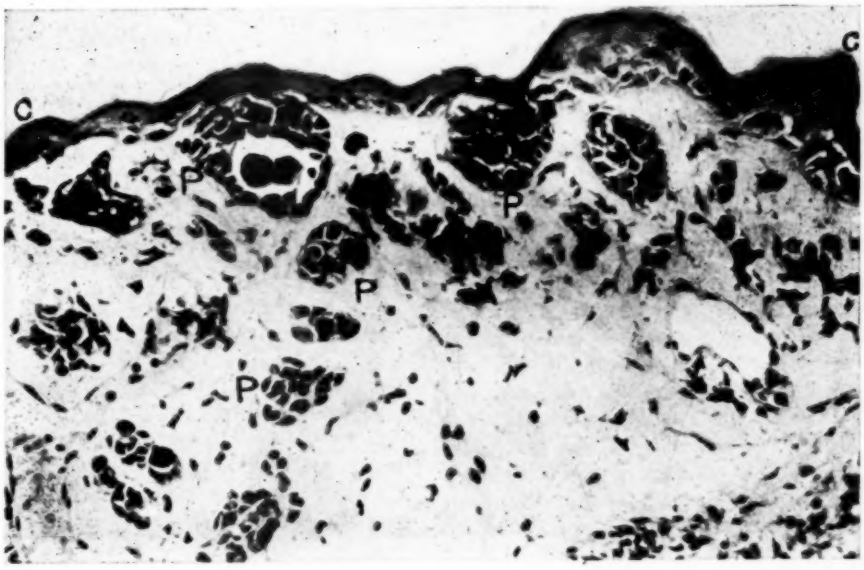


Fig. 1. Section near summit of nevus through covering epithelium and underlying tissue, showing C, covering epithelium; and P, groups of pigmented nevus cells.

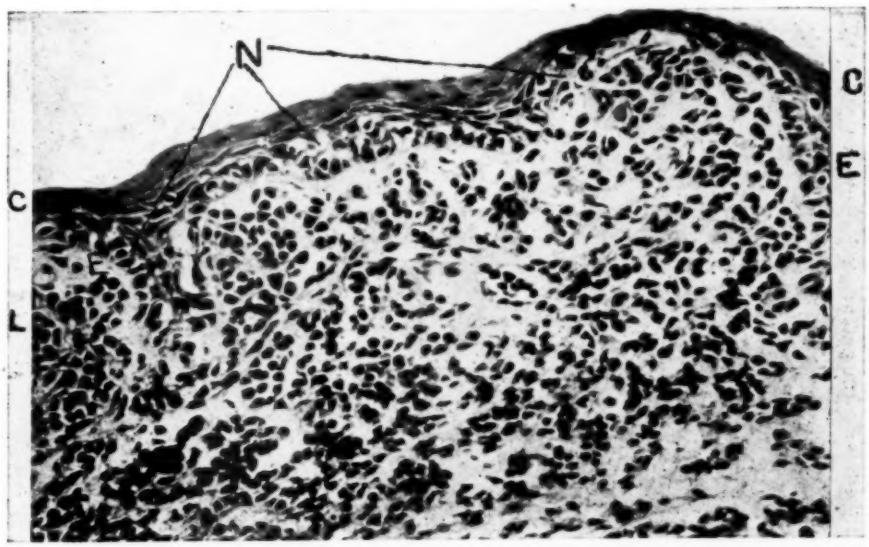


Fig. 2. Section at one side near base of nevus through covering epithelium and underlying tissue, showing C, covering epithelium; E, epithelial downgrowth; N, nevus cells developing from basal epithelial cells; and L, masses of nevus cells.

covering epithelium. For the most part the new-formed nevus cells here contain no pigment. From some of the epithelial downgrowths in this portion of the growth, nevus cells can be definitely seen to be developing.

Some hair follicles and sebaceous gland acini are seen near the base of the growth. Many small and a few large capillaries are scattered through the tumor.

According to Unna (Histopathologie der Hautkrankheiten, 1894), all pigmented and nonpigmented flat or wart-like nevi of newborn infants and children exhibit a direct connection between the cutaneous epithelium, the hair follicles, or the ducts of sweat-glands, and the cell cords of the nevus. In these structures there is a progressive transformation of prickle-cells into clumps of pliable, ameboid cells, without spines or fibrils. The epithelial origin and nature of these cells is still attested by their clear oval vesicular nuclei and their immediate contact with each other and with the neighboring epithelium, without the intervention of intercellular substance. The metaplastic process shows a constant tendency toward the complete isolation of groups of altered epithelial cells which are completely surrounded by the connective tissue of the derma.

Perhaps it is because we do not more often examine nevi microscopically when their possessors are still infants and children that we so rarely see the direct and undisputed derivation of nevus cells from epithelial cells. Our own case in a patient fifteen years old certainly supports Unna's claim. Nevertheless it is altogether probable that nevus cells may also be derived from fibroblasts and chromatophores, as maintained by other pathologists.

826 Metropolitan building.

SOCIETY PROCEEDINGS

BROOKLYN OPHTHALMOLOGICAL SOCIETY

October 20, 1927.

DR. JAMES H. ANDREW presiding.

Retinoblastoma.

DR. LEON GREEN reported the case of a two year old girl whose mother had noticed a small white spot in the pupillary area of the left eye. On dilating the pupil, a growth was seen on the nasal side, pearly white in color, showing two areas of extravasated blood. History, physical examination, Wassermann, and transillumination were negative. The case was presented for opinion as to diagnosis.

Discussion. The consensus of opinion was that it was a glioma and that the eye should be removed.

Bilateral Choked Disc in Lethargic Encephalitis.

DR. JOHN BAILEY reported on a case of lethargic encephalitis in a woman aged 37 years. Family history was negative. She had had typhoid at thirteen years; biliary colic at eighteen, recurring five years later. There had been five normal pregnancies, the last child having been born March 19, 1927. Two weeks after her last confinement, the patient felt ill. Temperature was 103°. Clinically the case appeared to be influenza. At the end of two weeks, convalescence set in and at this time the eye symptoms began. Chief among these were photophobia and metamorphopsia. Pupils were large and regular with normal reactions. Adduction of left eye seemed restricted and the fundi showed mild optic neuritis. The diagnosis of lethargic encephalitis was made and the patient was admitted to the hospital, April 17, 1927, temperature, pulse and respiration being normal. Wassermann and nose examination were negative. White blood cell count was 14,500; differential normal. Spinal tap showed fluid under ++++ pressure, clear, with a faint trace of albumin and copper reduction somewhat below normal. At this time the pupils were unequally dilated and did not react to light, the left eye turning outward. Later, nystagmus of the vestibular type developed, the discs becoming swollen. There was paralysis of the right facial and left hypoglossus, a suggestion of Babinski on the left side, and right hemiplegia. Typhoid bacilli were administered, beginning with ten million, increasing the dose up to one thousand million. There was gradual improvement so that the patient was discharged from the hospital two months after admission, being able to recognize large objects at a distance of a few feet.

In commenting on the case, Dr. Bailey felt that notwithstanding the fact that most writers are of the opinion that there are no fundus changes in this condition, the diagnosis cannot be challenged. The blindness in all probability is not of cortical origin but has its seat in the primary optic ganglia. Bilateral choked disc with early blindness should direct attention to a distended third ventricle, which is in all probability the chief reason for the loss of sight.

Cataract Extraction.

DR. ARNOLD KNAPP stressed the advantages of the intracapsular method as there are no complications due to cortex irritation and the operation for secondary cataract is done away with. The important step in this operation is the dislocation of the lens, and, in his opinion, to use external pressure alone is, as a rule, too severe a method. If intracapsular operation is undertaken and it fails at any step, the technique of the capsulotomy method can be used to complete the operation. In his opinion the cases most suitable are (1) immature lenses, especially those with sclerosed nuclei, and (2) opacities in the posterior part of the lens. The contraindications are (1) in bulging eyes, (2) in myopic eyes, (3) when there is only one eye, and (4) in poorly behaved patients. In describing the operation

the following steps are given: (1) injection of the lids and of the superior rectus muscle; (2) iridectomy; (3) grasping the capsule below the lower margin of the iris with the Kalt forceps so that, by lateral manipulation aided by gentle pressure from below, the lens is dislocated. (4) After dislocation has taken place, the lens comes forward, the forceps is removed, the lens is tumbled, final attachment above giving way last. The speaker reported 65 cases observed over a period of from six to fifteen years. Not an eye was lost and only one case of detachment of the retina and one case of glaucoma (in an eye having heterochromia and cyclitis) were reported.

Discussion. MAJOR WRIGHT of Madras, India, uses more conservative measures because of the great risk in Indian patients. He has had good results in a series of fifty cases operated on according to Aaron Green's method.

WM. F. C. STEINBUGLER,
Secretary.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Section on Ophthalmology and Otolaryngology.

October 21, 1927.

DR. W. T. DAVIS, chairman.

Orbital Abscess and Panophthalmitis Complicating Diabetes.

DR. A. P. TIBBETS reported the case of Mrs. J. C. White, aged 35 years, who was admitted to George Washington University hospital Aug. 18, 1926, with the diagnosis of diabetes mellitus and panophthalmitis. Her chief complaint was loss of vision and swelling of the left eye, with stiffness of the left side of the face and severe headache. One month before admission to the hospital the patient suddenly had the sensation that her eyes were crossed. The vision of the left eye began to fail, and the upper lid to swell. Within six hours of the onset she was unable to move the eye in any direction and vision was completely lost. From this time the whole left side of her head felt numb, and she suffered from severe headaches. There was a progressive swelling of the upper and lower lids. Greatly emaciated, the right eye appeared normal and vision was good. The left upper lid was greatly swollen, red and edematous. At the inner part of the orbital fold was a nipple-like papule from which exuded a drop of pus. The lower lid was everted and the conjunctiva of the fornix greatly hypertrophied so that it projected as a firm mass between the lid and globe and appeared to be adherent to both. Light perception was not present. The cornea was clear except for a hazy spot at the center and another small area at two o'clock. The anterior chamber was shallow due to a pushing forward of the lens and iris, and contained pus. The lens was clear, allowing a view of a yellowish mass within the vitreous. The fundus could not be seen.

On Aug. 23, 1926, an incision was made through the upper lid just below the orbital margin and internal to the supraorbital notch. Several drops of pus escaped. A probe passed freely along the orbital roof but no necrotic bone was encountered. A rubber tissue drain was left in place two days, then removed and the incision allowed to close.

Roentgen ray study showed complete opacity of the left frontal sinus, antrum, and ethmoids, and partial opacity of the sphenoid. The sinuses on the right side looked clear except the frontal, which was somewhat cloudy. Examination of the left nostril showed a perforation about one centimeter in diameter, involving both the cartilaginous and bony septum. The area about this perforation was black, dry, and lusterless. This perforation increased in size daily for a while, and pieces of bone became detached and were removed. The inferior turbinate was blackened and mummified. It later became separated and was lifted out in one piece. The ethmoid region was blackened and shrunken and there was a profuse discharge of pus from beneath the middle turbinate. The remainder of the outer wall was denuded and felt rough to the probe.

Under local anesthesia the opening into the antrum was enlarged and the necrotic ethmoid cells cleaned out. An area of necrosis was present in the orbital wall of the ethmoid through which a probe passed freely into the orbit. By using gentle leverage the eyeball could be pushed forward. Section of the tissue removed from the ethmoid showed nothing but necrotic bone and chronic granulation tissue, while pus from this region developed a pure culture of the staphylococcus aureus. Blood Wassermanns made August 25th and September 22nd were found negative.

There was no doubt that without the intensive diabetic therapy carried out under the direction of Dr. Mallory, this condition would have proved fatal within a short time. Under this treatment, however, the progress of the disease was arrested and after all sequestra had been removed the tissue assumed a healthy appearance and the purulent discharge diminished until it was hardly perceptible. The patient left the hospital in October, 1926, practically sugar free. She was seen twice a week, the antrum irrigated, and the hyperplastic mucosa of the lower lid cauterized with the electro-cautery to make an enucleation less difficult.

She was readmitted to the hospital Sept. 24, 1927, with diabetic coma, and died that evening. Autopsy showed marked interstitial pancreatitis, acute parenchymatous degeneration of the liver, and chronic interstitial nephritis.

The usual cause of orbital cellulitis had been shown to be direct infection from the ethmoid cells. Birch-Hirschfeld found that sixty percent of his cases followed diseases of the nasal accessory sinuses, especially ethmoiditis. A very unusual feature of this case was the gangrene and necrosis of the nasal septum and lateral wall of the nose, complication of diabetes.

Discussion. DR. WILLIAM J. MALLORY said that any infection was a great detriment to the control of diabetes, and pointed out the fact that vomiting in a diabetic patient was a sign of impending coma.

Mosher-Toti Operation for Dacryocystitis.

DR. C. W. RICHARDSON said that we should all be familiar with the Mosher-Toti operation. He described in detail the technique which he employed, and reported twenty-three cases upon which he had operated with favorable results. He said that following extirpation of the lacrimal sac epiphora remained, while this disagreeable feature did not persist following the procedure described. Some of his cases had been free from epiphora two and three years after the operation. The only complication encountered in his series was erysipelas which developed following the operation in one case.

J. N. GREEAR, JR., M.D.,
Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

October 24, 1927.

DR. EDWARD B. HECKEL, president.

On invitation of Dr. John B. McMurray, the meeting was held at the new hospital in Washington, Pa., and included an inspection of the hospital. The entire scientific program was given by Dr. McMurray.

Modification of Ellett Suction Apparatus.

DR. MCMURRAY exhibited his modification of the Ellett apparatus for sucking lens material from the anterior chamber in cataract extraction. The modification consists of the introduction into the rubber suction tube of the ordinary glass drop-nozzle which is used for the Murphy drip, etc. This prevents the possibility of accidentally getting any of the lens matter back into the mouth of the operator.

Neutral Acriflavine in Gelatin.

DR. MCMURRAY reported some favorable clinical results with the use of neutral acriflavine in gelatin in the treatment of conjunctivitis. He has conducted some bacteriologic experiments with it in the laboratory but has not been able to substantiate the claims

made by some other observers. In his hands, molds and some bacteria have grown in a 1 to 1000 solution. Clinically, the gelatin preparation feels agreeable to the patient.

Neuroepithelioma (Retinoblastoma).

DR. MCMURRAY presented W. B., aged three years. He was first seen Feb. 5, 1927. The mother brought the child to the office thinking he had a cataract in the right eye. She had first noticed this condition three weeks previously. Examination showed a growth of the lower part of the right globe, posteriorly, with vessels extending over it. A tentative diagnosis of neuroepithelioma was made and operation advised.

In June, 1927, the right eye was very much enlarged, and there was a pronounced dark ring just behind the corneoscleral margin with pigment of choroid showing through. The growth had extended past the median line, still covered with vessels, and seemed to occupy the whole posterior half of the globe. Enucleation was again advised.

The eye was enucleated June 21, 1927. The pathologist's report was neuroepithelioma with necrosis of tumor mass in many places and blood clots; a proliferation of nerve cells along the optic nerve back as far as it was amputated. The amputated nerve at time of operation was fully three-fourths of an inch.

On Aug. 6, 1927, there was a small swelling in the depth of the orbital cavity that had the appearance of a recurrence. This was watched every week until Sept. 19, 1927, when the orbital cavity seemed to be very much fuller than normal. While the swelling was soft, it was thought to be a recurrence of the neuroepithelioma and radium treatment was advised. The patient had one treatment with radium following which there was very marked reaction. No further radium treatment is contemplated but roentgen ray treatment will be continued as long as indicated.

Discussion. DRS. STANLEY SMITH, EDWARD STIEREN, and EDWARD B. HECKEL thought that the prognosis was bad in this case because of the rapidity of the growth and the extension backward along the nerve as seen in the enucleated eye shown. Dr. Stieren and Dr. Heckel would have used roentgen ray or radium without enucleation or exenteration. Dr. McMurray stated that enucleation in this case was necessary on account of the severe pain and impending rupture of the globe.

Dr. McMurray also presented B. B., female aged five years, whose mother first noticed the white appearance of the eye about six months previous to first examination. Child is perfectly healthy, never any illnesses except the usual ones of childhood, whooping cough and measles. Examination of the eye showed the vitreous chamber to be almost filled with a growth that had shoved the retina forward. It was impossible to make out any detail in the fundus except on the apex of the growth nearest the lens. The periphery could not be seen.

Provisional diagnosis was tumor, probably neuroepithelioma. The eye was enucleated July 23, 1920, and the pathologist's report was a neuroepithelioma with no extension into the optic nerve. The case was presented today, after seven years, showing there was no recurrence of the growth in the orbit.

Elephantiasis arabum.

DR. MCMURRAY showed W. L. R., male, aged 13 years, who had had swelling of the upper lids which began in 1921. This had gradually increased until on July 9, 1926, it was difficult for the patient to elevate the lids. There was very pronounced deformity on account of the hypertrophied tissue overhanging the palpebral margins of the lids. The appearance of the swelling was not that of an inflammation, but more of a dusky red. On palpation the tissue was firm and lobular. There had never been any tenderness or pain. There were no other areas on the patient's body showing the same condition.

Treatment had been incision through the skin of the upper lids and removal of as much of the subcutaneous tissue as possible without injury to the orbicu-

laris muscles. This was done not as a curative, but as a cosmetic procedure.

Discussion. DR. STIEREN, in operating upon this condition, would take the skin with the subcutaneous tissue.

DR. HECKEL stressed the differential diagnosis from blepharochalasis.

Herpes Zoster Ophthalmicus in an Infant of 15 Months.

DR. MCMURRAY pointed out that herpes zoster ophthalmicus is an exceedingly rare condition in infancy. A somewhat extensive but not complete examination of the literature confirms that statement. He found no cases in the American literature. Millon states that "Comby, the great authority of zona in children, has no case of zona ophthalmica occurring under ten years of age. The same applies to most other authorities cited".

The patient, a female infant, G. H., aged 15 months, was brought to the office on Aug. 27, 1926, because of a left cervical adenitis. There was a decided swelling, approximately two inches in diameter, beneath the tip of the left mastoid, hot to touch, painful, and apparently causing considerable discomfort. The temperature was 99.4°.

On September 5th the gland had suppurated. It was incised and drained. At this time there was a rash, erythematous in character, which had been present for about 48 hours over the head and neck. The patient was not vomiting, sleep had been restless, she was somewhat irritable. Erysipelas was suspected at this time. The following morning, however, there were many vesicles over the right forehead upon an inflammatory, edematous base. They were slightly painful; eyelids somewhat swollen.

On the 7th, there was much more edema of the lid and many vesicles. There was a sharp line of demarcation at the median line, the scalp was involved to the crown, and the vesicles extended down over the right temple, right supraorbital ridge, and right side of nose. It was difficult to examine the eye at that time, but no evidence of corneal involvement was noted. Epiphora and apparently some photophobia were present. The following day the vesicles appeared larger; some had ruptured spontaneously. The child, while restless, did not seem to be having severe pain. The temperature was 100.6°, pulse 132, respirations 40.

Improvement set in the following day and a week later the patient was practically well. The cornea did not become involved. The treatment consisted of sedatives and powdered zinc oxide locally.

Discussion. DR. HECKEL advocated keeping the lesion scrupulously clean and painting the eruption with one percent silver nitrate solution. He also spoke of remembering how long it sometimes took for the condition to get well.

Carcinoma of Pituitary Body.

DR. MCMURRAY presented J. B., colored, male, aged 45 years, who was first seen on June 3, 1927. The chief complaint was pain in head and inability to raise his upper eyelids or move his eyeballs. In August, 1925, patient had influenza, was told he had sinus trouble, and received treatment for it. He recovered from the influenza about one month later and felt fairly well until the early part of April, 1926, when he began to have trouble with his eyes. He noticed that both eyes turned in and that he saw double. He kept his left eye closed in order to see better. While walking with right eye closed, he noticed that he had a tendency to fall to the right side. July 6, 1926, he developed left maxillary sinus disease and had the antrum drained. His tonsils were also removed in July. In August, the patient began to have severe pains in the head. These seemed to radiate from frontal to occipital region. They had been severe enough during the past two weeks to require hypodermic relief.

The patient had had gonorrhea twenty-five years ago which was treated but had severe complications including prostatitis requiring treatment for two or three years. Twenty-five years ago he had a chancre which was treated locally, and some mercury given by mouth but only for a few months.

On June 3, 1927, when he was admitted to Washington hospital, examination of the eyes was as follows:

Both eyes were markedly exophthalmic with the left upper eyelid completely paralyzed. There was a ptosis of the right upper lid, but the patient could raise the lid slightly. The left pupil was slightly larger than the right but both pupils appeared fixed. He could read fine print with +3.00 sphere. He was unable to move either eyeball in the slightest degree in any direction, the eyeballs both being fixed in the primary position. The fundus examination was negative. Fields were normal. Vision was 6/6 either eye.

Roentgen ray plates showed, in lateral position, an absorption of the posterior clinoid processes, a very distinct shadow extending posteriorly toward the occipital fossae with vertical extension one and one-half inches from the base of the skull. The sphenoidal and posterior ethmoidal cells were cloudy. The maxillary and frontal sinuses were not clear. Roentgen ray diagnosis: Frontal sinuses cloudy, especially right.

The diagnosis was thought to be a gumma at the base of the brain posterior to the chiasm. At autopsy there was found a carcinoma originating in the posterior part of the pituitary body, extending backward with pressure necrosis of posterior clinoid processes and body of sphenoid. There was a pansinusitis.

Discussion. DR. HECKEL thought the case especially interesting on account of the absence of disc and fundus changes.

GEORGE H. SHUMAN, M.D.,
Secretary.

SAINT LOUIS OPHTHALMIC SOCIETY

October 28, 1927

DR. JOHN GREEN presiding

Simple Chronic Glaucoma: Operation after Luedde's Method.

DR. J. A. FLURY reported six cases after briefly describing the operation as reported by Dr. W. H. Luedde in the American Journal of Ophthalmology for May, 1924.

Mr. L.K.R., aged 69 years, first seen Dec. 27, 1924. Right vision 6/10, left vision 6/5. Tension (Schiötz) right 55, left 18 mm. Right field contracted above and nasal side. Ophthalmoscope; right deep glaucomatous cup; left disc normal. Diagnosis, right, simple chronic glaucoma; advised operation, patient refused. Carried patient along with pilocarpin and eserin until July 3, 1925, when he developed pneumococcic ulcer; used Shahan's thermophore and milk injections, recovered with slight scar. Operated on right eye, July 21, 1925, winged iridectomy, Luedde's method. During the past two years has seen patient every two months, tension, both eyes, never above 22 mm., no miotics used. Vision of right eye with correction is 20/48, left with correction is 20/38. Good filtration scar. Now showing general lens changes. Right field, June, 1927, contracted above to 20°, left field normal.

Mrs. G.K., aged 65 years, seen Dec. 17, 1926, vision failing past two years. Right vision 4/75 left vision 2/75. Tension, right 40, left 43 mm. Marked lens changes both eyes. Pilocarpin and eserin failed to control tension. May 6, 1926, winged iridectomy, Luedde's method. Aug. 12, 1927, tension, right and left, 19 mm. Good filtration of both eyes with small blebs. Oct. 19, 1927, extracted right lens.

Mr. J.W.R., aged 80 years, first seen Nov. 16, 1926, vision failing for past year, vision right 20/38, vision left 20/75. Fields show contraction nasal side and above. Both lenses milky. Tension right 41, left 51 mm., tension reduced under pilocarpin and eserin for a time, then returned. April 13, 1927, right eye, winged iridectomy, Luedde's method. April 24, 1927, tension right 19, left 48 mm. July 25, 1927, right tension 20, left 50 mm. Has not seen patient since.

Mr. Jno. K., aged 34 years, seen first Dec. 2, 1925. Right vision 6/6, left vision light perception. Tension right 38, left 55 mm. Right field fifteen degrees contraction nasal side and above, right disc slight cupping; left deep glaucomatous cup with atrophy. Tension unchanged by the use of

pilocarpin and eserin. Feb. 27, 1926, winged iridectomy, Luedde's method. March 18, 1926, tension right 22, left 45 mm. Oct. 25, 1926, tension right 20, left 50 mm. Right vision with correction 6/6. Field unchanged.

Discussion. DR. N. R. DONNELL said that he had had very little experience with Dr. Luedde's operation in the type of case under discussion, but that he had followed his technique in one case of secondary glaucoma with deep anterior chamber. There were two things that impressed him about the procedure; first the ease and seeming safety with which it was done; second the small amount of trauma occasioned by the operation.

DR. J. M. KELLER stated that he wished to emphasize one point with regard to the so-called winged incision; that is, the value of this procedure in cases where one cannot get into the anterior chamber with a keratome because the chamber is too shallow, and where the usual incision with a Graefe knife is impossible for the same reason. In those cases a small incision with the narrow Graefe knife can be made at the upper limbus. Then the incision can easily be enlarged at both ends with the scissors and the iris excised in the usual way. On account of the ease and safety with which this operation can be performed, he thinks it invaluable in such cases.

DR. W. H. LUEDDE said that he was of course pleased to hear this report, but could not be as enthusiastic as indicated by the report that all operations by this method are successful. In the first group he had reported, there was one of hemorrhagic glaucoma, where he merely saved a quiet sightless globe. One case did well for several weeks, but the patient was a diabetic and nephritic and developed recurrent intraocular hemorrhages and vision was ultimately lost. There are conditions in which no operation can be done with safety, but not all of our cases get along well when miotics only are used. It would be folly to say any operative method gives absolutely constant good results in glaucoma. However, he believes this particular combination of technique offers as safe and as easy a method as any we have for entering an eyeball under conditions of excessive intraocular tension.

DR. M. WIENER expressed a preference for the trephine operation and said that he had never performed the operation described by Dr. Luedde. He thought that Dr. Flury and Dr. Luedde had not sufficiently emphasized the ease of its performance and the fact that there is less danger to the eye. Dr. Wiener thought that it would be much easier than the Lagrange, because after one has his conjunctival flap made and the cornea slit, it is a simple matter. He imagined it would be a difficult matter to enlarge that opening with thin blunt scissors, but could not understand why it should be less prone to resist infection if it is successfully done than a trephine well placed. The operation seemed a logical one and he intended to try it. Mention had been made of the production of a cataract in two cases. It seemed to him that there would be less danger of injuring the lens if one used the blade of the scissors, because even with a trephine one could slip in too far and injure the edge of the lens.

DR. JOHN GREEN said iridectomy with winged incision had proved very satisfactory in his hands. Even in the desperate case where there was no prospect of saving vision (iridic and retinal hemorrhages) it had been the means of preserving a painless globe.

He has made two slight modifications: (1) presuturing the flap and (2) angling back the ends of the cut so as to form a wedge-shaped scleral flap. At each dressing slight pressure is made on the globe, thus tending to separate the edges of the wedge. The appearance of a line of blebbing, when healing is complete, leads him to believe that minute interstices all along the line of the wound permit the aqueous to reach the subconjunctival space.

Following this operation tension is reduced but there is no hypotony. To his mind an eye that is a little too soft is in more danger than one that is a little too hard.

In case of rise of tension after iridectomy nothing has served so well as the performance of iridotasis from one angle of the coloboma. It is a simple matter to make a small incision under a flap, draw out the iris, incarcerate it in the wound, and replace the flap.

DR. J. A. FLURY in closing said that Dr. Luedde recommended splitting the cornea, then making his incision. In the cases reported this evening, the cornea was not split. In performing the operation, a dull pair of scissors should be used, if sharp ones were employed one would not get the result.

Factors of Safety in Cataract Extraction.

DR. F. O. SCHWARTZ read a paper on this subject and said in part that the stages in any surgical case can be divided roughly into three divisions, (1) the preoperative, (2) the operative, and (3) post-operative. Careful preoperative preparation was second in importance only to the actual surgery itself. Too much stress could not be placed on the importance of the history. Exact records of vision, light projection, and refraction are necessary, and tonometric readings are of the greatest importance. Two negative cultures from the conjunctival sac should be obtained just previous to operation. The physical examination should include a urinalysis, chemical and bacteriologic, blood pressure readings, and a genitourinary examination with special reference to the prostate. A determination of the exact clotting time may avoid a complicating hemorrhage. Pathology within the nose and throat and infections of the teeth and gums must be considered. The speaker believed that metastatic infection was more frequent than infection from a local source.

The second or operative period begins with the patient's admission to the hospital. The night before operation a cathartic is given and the diet restricted. No food is given at mealtime just prior to operation. This eliminates the possibility of vomiting, whether due to a drug, psychic influence, or reflex. Morphine is administered thirty minutes before the time set for operation. Thorough washing of the face, with particular attention to the region of the eyes, with green soap and sterile water, should be followed by alcohol to the skin and an application of bichloride solution, 1:5000. The conjunctival sac should be flushed with the same solution, care being taken to penetrate behind the tarsus above and well within the fold. This flush should be followed by sterile water. Cocain and adrenalin should have produced thorough anesthetisation before the knife is introduced. During the past two years he has used a wide angle flap similar to the Elliot, with excellent results. This is dissected free from the sclera and laid down over the cornea, and a double-armed suture introduced near its apex. The needles are carried under the conjunctiva above and the loops of thread are permitted to remain over the cornea. The flap insures a closed wound without incarceration of iris tissue. After delivery the suture is tied, the wound sealed by the flap, and atropin 1% instilled between the lids. Dressings are applied to both eyes and a wire mask is placed over these.

Discussion. DR. J. W. CHARLES remarked that he had heard nothing said about getting hold of the personality of the patient. It seems to him that this is one of the most important prophylactic measures we can use. The first thing is to inquire into the blood pressure, for one knows the danger of intraocular hemorrhage, and the value of reducing the blood pressure before operation if possible. He never gives the patient a cathartic the night before operation, because he thinks that sometimes it shakes the patient up just enough to make him nervous. After his examination he sends the patient home to have his bowels regulated and to get him accustomed to having the intestinal tract fairly well cleaned out. Then he gives five grains of veronal for two or three nights before operation, which puts the patient in a pleasant frame of mind. He has never tried morphine and does not like the possibility of nausea from it. As to

lavage, he has used it somewhat but also likes the elder Dr. Post's method in handling the cortex. After removing the nucleus he removes the speculum and allows the anterior chamber to fill and then uses the lid holder and again empties the anterior chamber. He has never operated on a patient before he had previously put in a speculum and touched his cornea under cocain with a probe and shown him that the operation does not cause pain.

DR. M. JACOBS said that he believes the same rule should not apply for every patient as to the length of time he should be kept in bed. He has seen patients who were very miserable as a result of being kept in bed three or four days. On the other hand there are patients who, because of a certain amount of shock, are better off in bed two or three days.

DR. W. H. LUEDDE said that he had used morphine regularly, but five years ago Dr. Flury suggested to him the subconjunctival injection of a drop of cocain solution and he had since found it unnecessary to use morphine. He does not urge the patient to lie in bed constantly for more than a day or two. Dr. Schwartz mentions daily dressings. Dr. Luedde sees no occasion unless the symptoms indicate it to change the first dressing for three or four days. Colonel Smith's advice not to remove the dressing for nine days, except for special cause, was generally justified by the results in the cases upon which he operated in St. Louis.

DR. LAWRENCE POST said that he does not like morphine very much for fear it will not act as nicely as Dr. Schwartz thinks. Most of the things Dr. Schwartz does he agrees with. He likes a subconjunctival injection of the anesthetic. It does away with pain. In assisting graduate students to operate two years ago he began the practice of placing a suture underneath the superior rectus and using it for traction forward. It gives a great feeling of safety. The patient cannot look up. It prevents vitreous prolapse. It is of value in patients who are inclined to be unruly. The essential to him in a mask is something which will keep pressure off the eye. The mask must rest against the face; not against the eye as so many masks do. He agrees with the essayist that patients should stay several days in bed unless there is some definite contraindication. Patients who remain in bed do better than those who are allowed to get up on the first day or so following operation.

DR. E. C. SPITZE, like Dr. Post, thought the injection of five or six drops of cocain and adrenalin below the cornea a great help.

DR. M. WIENER agreed that one of the important things was to get the patient's full confidence. One thing important is to prepare him for the slight amount of pain he will have with iridectomy. Dr. Wiener always tells him that the operation hurts a little. He takes hold of his finger and pinches it. That prepares him for what comes. He does not believe in giving a cathartic. If his patient is accustomed to taking a little whisky he lets him have it; if he smokes he lets him have tobacco. He believes in letting patients get out of bed the day after operation and sees no danger from that. He thinks of no complications that have come from that. The greatest fault of all beginners and of many men not beginners, is in making too small an incision. Someone asked about the wire mask. He uses the double Fuchs mask. He tried a single mask and found great danger of its sliding off. If the double wire mask is bent properly there is no pressure at all. After it is placed he takes a broad piece of adhesive and fastens it to the forehead. In cases of unripe cataract it is his practice to operate when the patient is greatly inconvenienced. He has operated when vision was 15/70, and he has refused operation on patients with 15/300 vision. Some are satisfied with 15/300, and if they are satisfied he believes in letting them alone. His technique is to do a preliminary iridectomy and stroking of the lens twenty-five to thirty times, very slowly.

DR. JOHN GREEN said as to the management of an unripe nuclear cataract, in a few of these cases he had

found great satisfaction in the use of telescopic spectacles associated with eucatropin drops. Two patients with mature cataract in one eye and immature nuclear cataract in the other are perfectly satisfied, as they can read newspaper print easily.

DR. SCHWARTZ, closing, said regarding the use of morphine he felt that it gave a sense of quietude to the patient. It has the added advantage of making the iridectomy painless. He believes we do not get any penetration to the base of the iris with cocain dropped into the conjunctival sac. He has not had a great deal of experience with subconjunctival injection but does not like the idea of penetration by raising a bleb because that tends to obscure the operative field to some extent. Of course the conjunctival flap does this also. His first dressing is three days after operation. We can tell a lot about the condition of a dressing by using our sense of smell.

CHARLES W. TOOKER,
Secretary.

MEMPHIS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

November 8, 1927.

DR. P. M. LEWIS presiding.

Alternate Fixation Without Strabismus.

DR. E. C. ELLETT reported the case of a patient with strabismus, cured by glasses, but without the development of binocular vision.

K.M. has been under observation since 1919, at which time she was seven years old. The history was that the right eye had tended to turn in for a month and that she sometimes saw double. She seemed to have binocular vision and about 4° esophoria. Vision was normal and she was much benefited by glasses, the correction being +2.25 sphere in each eye, tested with atropin. The squint later became periodic, and was apparent only every other day. General examination never showed anything wrong, and quinin was given without any benefit. The child gradually improved until now, at the age of fifteen years, there is perfect parallelism even without glasses, but no binocular vision. She looks from one light to the other so quickly that for a long time she saw two lights with a displacing prism, but after many tests and attempts to measure the error it was seen that she saw the lights one at a time. She wears glasses now for reading only, and there is no deviation, even under cover.

DR. GILL thought the fusion faculty must still be present.

DR. ELLETT thought this case had never had any fusion faculty. Cases of strabismus with low refractive error are commonly alternating in type, apparently have no fusion faculty and are the hardest to correct.

Motais Operation for Ptosis in Both Eyes.

DR. E. C. ELLETT presented M. N., aged eight years, who had complained of drooping of both upper lids since birth. The ptosis and a moderate nystagmus were the only ocular symptoms; the vision, eyegrounds, etc. being normal. He had to tilt his head back to see. Upward rotation of the eyes, carefully noted, was found to be normal.

The Motais operation, which is possible when the superior recti are intact, was done under ether on both eyes on September 22nd. A horizontal incision through the skin of the lid at the upper border of the tarsus made it easy to draw the tongue of the muscle through the lid and then place it in a pocket made between the tarsus and the skin, the sutures holding this tongue being passed through the skin and lid. The skin incision and the tying of the sutures on the skin were not a part of the original technique. The sutures were let alone till they cut out and a good result was secured.

The lids of each eye are now clear of the pupils, but do not completely close during sleep. At first the eyes were wide open and had to be protected by a celluloid shield and vaseline. The corneal epithelium in one eye became disturbed and stained with fluorescin once during the convalescence.

Discussion. DR. J. B. STANFORD suggested the possibility of transplanting some ox fascia or cartilage in the margin of the lid before doing the Motais operation in order that the retraction of the lid would affect the entire margin of the lid evenly instead of retracting more in the center.

Sarcoma of the Iris.

DR. ELLETT reported further on a case of sarcoma of the iris shown at a previous meeting. The eye had done perfectly well surgically. The tumor was removed by a wide iridectomy and the tension fell from 60 to 22 (Schiötz), the vision remaining about 20/40. On October 4, the eye was found to be faintly injected and a small growth could be made out in the inner iris angle. It was very small and could just be seen projecting from under the scleral spur, but it could be made out that it arose from the iris and that the surface was flat from pressure against the cornea. With a binocular loupe, and better with the corneal microscope, small vessels could be seen in the substance of the growth. It was evidently a return of the original condition, though in another part of the iris. As the original growth was found to be a sarcoma, it is probable that the present trouble is of the same nature and enucleation has been advised.

Discussion. DR. ELLETT, in answer to questions, stated that the rise of the intraocular tension often was not proportional to the size of the tumor, some large tumors causing no glaucoma. The sarcoma here involved the root of the iris and it is probable that some interference with the normal drainage was responsible for the glaucoma. Transillumination of the eye was entirely negative. Sarcoma of the iris metastasizes by way of the canal of Schlemm and the anterior perforating vessels. The pathologic diagnosis in this case was spindle celled leucosarcoma.

Action of Adrenalin on Pupil.

DR. E. C. ELLETT reported a case illustrating a peculiar action of adrenalin on the pupil.

Mrs. D. S., aged 55 years, was seen July 15, 1927, through the kindness of Dr. M. H. Bell of Vicksburg, Miss., with acute glaucoma in O. D. of five days duration. The tension was 83 mm. (Schiötz). Glaucosan dilated the pupil till the edge of the lens could be seen, and lowered the tension perceptibly. Omitting the other details of the case, the eye was operated on under gas anesthesia while the pupil was still dilated. Contrary to the usual behavior of the pupil when the anterior chamber is empty the pupil did not contract at all and it is to this peculiarity in the behavior of the pupil when dilated by adrenalin that attention is especially called. It was with the greatest difficulty that the iris was grasped by forceps after several attempts. A satisfactory iridectomy was made. The pain and tension were relieved. The vision on September 15th was 20/25.

Discussion. DR. P. M. LEWIS inquired why the iris would remain dilated after surgery in such a case. Was the action of the iris an active or passive action?

DR. J. B. STANFORD asked whether the administration of glaucosan in an eye with choroidal and retinal arteriosclerosis might not cause an intraocular hemorrhage.

DR. R. O. RYCHENER stated that the theoretical action of glaucosan on the choroid was to produce a choroidal hyperemia as in uveitis, rather than an ischemia. However, in view of the effect sometimes noted on the general blood pressure and the blanching of the lids and cheek, it seemed possible that rupture of a sclerosed intraocular vessel might take place, although no such unfortunate effect had yet been reported.

DR. ELLETT called attention to the fact that glaucomatous eyes will dilate when adrenalin is dropped into the eye, while normal eyes will not. However, the administration of adrenalin subconjunctivally will cause dilatation of the pupil even in normal eyes. Adrenalin causes a vasomotor constriction and stimulates the dilator fibers of the iris,

so it would seem that the condition here noted was an active one.

Expulsive Hemorrhage after Cataract Extraction.

DR. JAMES B. STANFORD reported a case of expulsive choroidal hemorrhage on the third day after cataract extraction. The patient, Mr. B. D. M., aged 81 years, had had a preliminary iridectomy on the right eye on June 24, 1927, and on July 14, 1927, the lens was extracted. Corneal suture was used. On July 15, the anterior chamber was refilled and the pupil was black. The same condition existed the following morning. About 9 p.m., July 16, the patient went to sleep, but he awoke about thirty minutes later with a most excruciating pain in the right eye and with the dressing stained with blood. When Dr. Stanford saw him twenty-five minutes later, a mass of blood and vitreous was protruding through the palpebral fissure. Pain was relieved by opiates. The eye was enucleated on July 19th.

Cataract Extraction with Late Vitreous Prolapse.

DR. JAMES B. STANFORD reported an unusual complication in a cataract extraction in the case of Mrs. A. R. The patient was eighty years old and had been gradually losing her vision for three or four years. She was a very strong and vigorous woman for her age and weighed about 180 pounds. She had had an obstructed right nasolacrimal duct but this had been relieved by probing some years ago. She also gave a history of a dislocated left shoulder a number of times during the last ten years. In July, 1927, her vision in the right eye was 2/200, unimproved by glasses, and that in the left 20/40, unimproved. On Aug. 2, 1927, a combined iridectomy and cataract extraction was done on the right eye, a corneal suture after the method of Kalt being used. At the end of the operation the eye was perfectly satisfactory in all respects. At 8:30 p.m., twelve hours after the operation, the patient attempted to place herself comfortably in bed for sleep and dislocated the left shoulder. She suffered much pain and tossed about freely in bed despite the efforts of her nurse and the house surgeon to keep her quiet. Dr. Stanford ordered one-half grain of codein hypodermatically immediately and called Dr. Lipscomb to reduce the dislocation. One unsuccessful attempt at reduction was made without anesthesia. The patient was then given gas and the dislocation reduced. After the patient was again awake and comfortable, she said that she felt absolutely no discomfort in the eye, so the dressing was not disturbed. The following morning the wound was gaping widely and vitreous presenting. Pressure was applied to the eye, but the wound did not close completely for about two or three weeks and the upper half of the cornea has remained quite hazy with the iris drawn upward. Vision is limited to perception of light.

Progressive Amblyopia due to Pituitary Tumor.

DR. A. C. LEWIS reported a case of progressive amblyopia probably due to pituitary tumor. Dr. H., aged 73 years, had his back broken in the lumbar region by an automobile accident eight years ago. He wore plaster cast and jacket for many months and was partly paralyzed on the right side. Roentgen ray shows large deformity which is easily palpable on right side.

In November, 1925, he began to suffer with an aching pain in O. D. and right side of head. About one year later vision in this eye began to fail rapidly and was practically gone in six weeks' time. At present he has a very small field of vision (about 20° in diameter) in the central part of the right nasal field, no light perception centrally or in the temporal field.

In January, 1927, he began to have a constant aching pain in O. S. and left frontal region, which has continued almost uninterruptedly since. When examined Feb. 2, 1927, he had been under treatment for chronic glaucoma for several months. Vision was 20/200 in O. D. and 20/15 in O. S., with correcting lenses. Tension was then normal in each eye and no evidence of glaucoma was found in the fields or optic disc.

August 29, 1927, vision O. D. was moving objects in nasal field, O. S. 20/30. Fields were somewhat contracted, blind spot twice its normal size.

Oct. 10, 1927, vision O. D. was unchanged, O. S. 20/50. Pupil reacted normally to light and accommodation. Fields were considerably contracted concentrically and blind spot showed slight increase in size over last reading.

The fundi were practically normal in all respects. Roentgen ray plates of the pituitary region showed enlargement of the fossa, otherwise negative. This was probably a case of pituitary tumor.

Toxic Amblyopia.

DR. P. M. LEWIS reported two cases. Case 1. Mr. C. C., white male, aged 53 years, was first seen on July 8, 1927. He gave a history of gradual loss of vision for the past three or four months; admitted being a heavy smoker of cigars and pipe, and drinking a good deal of corn whisky.

Examination: Vision O. D. 2/200, O. S. 8/200, unimproved by lenses. Objectively his eyes were normal except for a moderate temporal pallor of the discs. The peripheral fields were normal for form and colors, but there was a central scotoma for red and green. Treatment consisted in absolutely forbidding the use of tobacco and alcohol, plus the administration of strychnine up to the therapeutic limit. Improvement was fairly rapid as is indicated by the vision. On July 12, 1927, it had increased to 20/200 in the left eye, with no change in the right. Six days later it was O. D. 20/200, O. S. 20/50. On July 22, 1927, vision was O. D. 20/100 and O. S. 20/50 +1. A week later, O. D. 20/100 +1, O. S. 20/40. On Aug. 20, 1927, vision O. D. 20/50 +1, O. S. 20/30 +2. Two weeks later vision was the same. He failed to report for further observation.

Case 2. S. R., white male, aged 59 years, was first seen on May 10, 1927. He complained of rapid failure of vision for the past seven or eight months. Had several pairs of glasses fitted, but with no improvement. Used tobacco and alcohol excessively for over twenty years.

Examination: Vision O. D. was 8/200, O. S. 4/200, unimproved by lenses. Externally the eyes were negative. The ophthalmoscope showed the papillae quite white temporally, but otherwise normal. Peripheral fields were normal for form and colors. There was a relative central scotoma of the right eye for red and green and of the left eye for all colors except yellow. Blood Wassermann was negative. Treatment was the same as in the above case, but not with the same result. Tobacco and alcoholics were stopped and patient was given all the strychnine he could stand for six weeks, but no benefit resulted. The vision had not decreased, however, as it probably would have done had not the tobacco and alcohol been discontinued. It was evident that the process had gone on to an atrophy of the papillomacular bundle.

Inferior Left Quadrant Hemianopsia.

DR. M. G. SELIGSTEIN presented the case of J. A. B., male, aged 50 years, who complained of partial loss of vision in the inferior field. Health had been very good until June, 1927, when he suffered an attack of heart trouble and the visual defect dated from that attack. The vision in O. U. was 20/25. The pupils were round, 4.5 mm. in size, and responded to light and accommodation. The upper halves of the retinas were not as photosensitive as the lower halves. The discs and fundi were slightly blurred, O. S. more than O. D. The veins were slightly dilated, with increased tortuosity in both arteries and veins.

Aug. 24, 1927, fields taken at ten day or two week intervals showed a marked loss of the superior fields and a generalized peripheral contraction as well as the inferior left quadrant defect which was complete in each eye. This case was diagnosed by Dr. O. S. Warr as a thrombosis of the coronary artery with recovery.

M. G. SELIGSTEIN,
Secretary.

LOS ANGELES COUNTY MEDICAL SOCIETY

Eye and Ear Section

November, 1927.

DR. BENSON WOOD, president

Congenital Defect of the Lids.

DR. FRANK DETLING presented a patient ten years of age, showing absence of lower puncta and of lashes of the nasal half of each lower lid. There was an associated absence of the auricles and external auditory canals.

Displacement of Pupil of Unknown Origin.

DR. MCKELLAR presented a man who has had a gradual drawing up of the left pupil for the past ten years. The tension is increased and the vision is only light projection in the temporal field. The fundus is seen with difficulty but the disc is cupped. The iris shows areas of atrophy. Transillumination is poor over the ciliary region. Dr. McKellar suggested intraocular tumor or chronic cyclitis as the cause. The right eye is normal.

DR. M. BEIGELMAN suggested syphilis as a causative factor.

DR. BOYCE stated that ten years duration was rather long for the possibility of intraocular tumor.

DR. WEYMANN suggested that the pupil be dilated with adrenalin for ophthalmoscopic examination of the ciliary region.

DR. W. J. MILLER presented slides of sectioned eyes showing various tumors and lesions.

Neurofibrosarcoma.

DR. BOYCE reported a patient who was seen first two years ago with a slight exophthalmos and a negative roentgen ray. One year later roentgen ray was still negative, with an increase in exophthalmos, no choked disc, and normal vision. Wassermann negative. One year later a Krönlein operation showed a hard bony tumor at the apex of the orbit. It could not be removed. The eye was then removed by Dr. La Motte with exenteration of the orbit. The pathologic diagnosis was neurofibrosarcoma of a comparatively benign nature.

M. F. WEYMANN,
Clerk.

American Journal of Ophthalmology

PUBLISHED MONTHLY BY THE OPHTHALMIC PUBLISHING COMPANY

Original papers, other scientific communications, and correspondence should be addressed to the editor. Reports of society proceedings should be sent to Dr. Lawrence T. Post, 520 Metropolitan Building, St. Louis, Missouri.

Proof should be corrected and returned within forty-eight hours to the editor. Twenty-five reprints of each original article will be supplied to the author without charge. Additional reprints may be obtained from the printer, the George Banta Publishing Company, 450–458 Ahnaip Street, Menasha, Wisconsin, if ordered at the time proofs are returned. But reprints to contain colored plates must be ordered when the article is accepted.

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PLANS FOR THE FUTURE

A new editor may naturally be expected to offer some sort of statement as to plans for the future. In the general arrangement of this journal no radical changes are at present contemplated. Inasmuch as the combined form of the Index Medicus and the Quarterly Cumulative Index, now published by the American Medical Association under the title of the Quarterly Cumulative Index Medicus, furnishes a reasonably convenient guide to periodical medical literature, the lists which have appeared at the end of each issue of the American Journal of Ophthalmology, under the title of "Current Literature", are discontinued. Other departments will go on much as before, with one important exception now to be mentioned.

Nothing else that can be undertaken in relation to this journal will quite fill the place of the Ophthalmic Year Book. Its systematic annual grouping of papers and reports on the same or related topics possessed a value for reference purposes which can not be equalled by any form of monthly abstract department; although such a department may possess some compensating advantages. The organization of a thorough ophthalmological abstract department presents some of the technical difficulties which were encountered by the Ophthalmic Year Book, but the passing of the Year Book will leave so serious a gap in the reference facilities of ophthalmologists, as far as the English language is concerned, that it seems desirable to attempt the best possible substitute.

It may even be that most ophthalmologists will derive more profit from glancing month by month through a comprehensive department of abstracts from other journals, especially those published outside the United States, than they did from having administered to them, in one annual dose, the huge mass of the world's ophthalmic literature in the form of the Year Book.

The very thorough abstract department conducted by Kayser in the Klinische Monatsblätter für Augenheilkunde carries an introductory sentence which may well be quoted here: "The scientific worker, in order to keep himself fully abreast of the recent literature, will look through the whole abstract section".

It is hoped that our own abstract department, in its more complete development, may include abstracts of most of the original articles from the current literature on ophthalmology. Abstracts will have their greatest value if published soon after the originals. Naturally an appreciable delay will be involved in the process of preparing the abstracts, gathering them together, and putting them into print; but this delay should be as brief as possible.

Those who have hitherto cooperated in maintaining this department have kindly consented to continue their labors; and a number of those who have written chapters of the Ophthalmic Year Book will also contribute to the abstract department. It may be several months before we can arrive at full coordination between available writers and the many foreign journals on ophthalmology.

The most serious difficulty in the way of developing a thorough abstract department is that of translation from foreign languages. Unfortunately, in spite of the cosmopolitan character of the population of the United States, relatively few medical men are in a position to do good work in translation from foreign languages into English. The abstract department of the Klinische Monatsblätter für Augenheilkunde, and that of the Revue Générale d'Ophtalmologie in the French language, offer translations from English, French, German, Italian, Spanish, Danish, Swedish, Polish, and Russian. From time to time it will be necessary to supplement our staff of abstracters; and the editor earnestly hopes to hear from any ophthalmologists who have not already offered their help, but whose linguistic training affords them special opportunities to serve in this capacity.

W. H. C.

SENILE CHANGES IN REFRACTION

A patient reaching middle age was given lenses and told that the glasses for distance would not need to be changed. The oculist died, the patient went to an optician and had the glasses changed for near work, and after ten years was wearing for distance R. +0.50 sph. −0.25 cy. ax 80°, L. +0.50 sph., with +3.25 sph. added for near. Suffering from eyestrain and complaining of having to hold things too near the eyes, the patient sought another oculist. The latter found that the correction for distance should be R. + 1.25 sph. −0.62 cy. ax. 85°, L. +1.75 sph. −0.87 cy. ax. 110°; and added for near work +2.50 sph. This formula gave relief from all the symptoms.

When errors, or "anomalies", of refraction were first widely studied, they were supposed to be congenital anomalies—conditions peculiar to certain individuals, that they carried throughout life. The myopes whose nearsightedness had been recognized continued to be nearsighted. It was supposed that astigmatic eyes would continue to be astigmatic, and hyperopia remain hyperopia; although Donders soon pointed out that in the general community there was a tendency for hyperopia to increase with age.

With records of large numbers of ocular examinations, it has become evident that nearly all eyes show some astigmatism, and a large majority are hyperopic, or myopic, to a degree making correction of practical importance if the eyes are to be used for the accurate vision required by many occupations. Cases of refractive error followed up from year to year, and statistics showing the changes of refraction at different ages, have now demonstrated that the refraction of any eye does very frequently change at different times of life. When a patient comes with glasses he has worn for some years, the probability is that they do need changing, and history of recent eyestrain may be supposed to point in that direction.

The changes in ocular refraction differ at various periods of life, as to frequency, character, and amount. Before birth the developing eye is highly hyperopic, and it probably continues to become less hyperopic after birth, perhaps up to four to six years of age. Children requiring lenses early for convergent squint often show dimin-

ished hyperopia as they grow up. Some eyes pass over into myopia, and myopia tends to increase during school life. These changes are frequent but not universal. They may go on for a time and cease, the refraction remaining unchanged for years. Exceptional eyes may show changes in the other direction. Further statistics, based on careful measurements of refraction, are needed to complete our knowledge of refractive changes during early childhood and school life.

Early adult life is the period when the ocular refraction remains most constant. But some eyes show continued increase of myopia. in spite of correcting glasses and care about near work. More eyes begin to show diminished myopia, or increasing hyperopia. A few show decided change in astigmatism, increase of amount, less frequently decrease, but most often some change in the direction of the meridians.

In middle life, from forty years on, changes in astigmatism become the rule rather than the exception. The general tendency is for astigmatism "with the rule" (plus cylinder with axis vertical, minus cylinder horizontal) to change to astigmatism "against the rule" (plus cylinder with axis nearer horizontal, minus cylinder nearer vertical). Such change may be shown by decrease of astigmatism even to zero, without much change of direction, followed by "reversal" of the meridians and gradual increase in that direction. More often the directions of the meridians show change, and these may gradually shift through the whole arc from 90° to 180°, or vice versa.

Through middle life the tendency of hyperopia to gradually increase, or of myopia to diminish, is very general. Sometimes it continues to extreme old age; but more commonly the eyes cease to become more hyperopic and become less so. Not rarely the hyperopia passes over into myopia, which may increase to several diopters, especially in cases that show lens opacities, with swelling or shrinking of beginning senile cataract. Often patients with incipient cataract can be kept comfortable and satisfied to the end of life by appropriate changes of lenses.

He who follows the changes of spectacles needed by his patients through a considerable series of years learns that changes in refraction with age are the rule rather than the exception; and, even when change is expected, the kind or amount of change may be surprising. One who has measured the eyes of all his circle of patients, even in a restricted community, need not feel that all his work of this kind is done. In the course of years nearly all will need remeasurement; quite apart from the loss of accommodation, or the changes due to disease, like conical cornea, cataract, or diabetes. Failure to appreciate this is a dangerous form of professional blindness.

E. J.

THE TREATMENT OF CHRONIC DACRYOCYSTITIS

Analysis of the chapter on the lacrimal apparatus in the Ophthalmic Year Book, for the past five years, reveals as perhaps the most interesting feature in the literature of this subject the controversy on the best manner of handling chronic dacryocystitis.

There are three principal methods. The first is treatment by probing, syringing, etc., the second is some form of dacryocystorhinostomy, and the third is extirpation or destruction of the sac.

Excluding cases of epiphora only and recent cases, probing seems to be falling more and more into disuse. Several factors may account for this. Possibly chief among these is that the twentieth century is an impatient age and is becoming progressively more and more so. Everyone must be hurrying somewhere. This affects both doctor and patient. Probing requires time and then more time. People are no longer willing to make two or three visits a week to the doctor for an indefinite period. They demand quicker results. The physician too is intolerant of protracted treatment. Another reason for the growing unpopularity of probing is the increasing efficacy of operative

procedure. Of the nasolacrimal operation at least this can be said.

The second method, which employs a technique having for its object the reestablishment of lacrimal drainage, is considered by its advocates to be a more physiologic operation than the removal of the tear sac. It is this group that has gathered the greatest number of disciples in the last few years. Various recent modifications of the technique have rendered this method efficacious in a very large percentage of cases. The biggest drawbacks have been the occasional blocking of the new passage with granulations and the reinfection associated with acute coryzas.

Undoubtedly, success depends on attention to many small details and experience is a great factor in learning these. An artificial opening can never compare favorably with nature's delicate mechanism and of necessity will be short of ideal. The wide nasal opening leaves the sac always more than normally exposed to nasal infections.

Another factor which will always prove a handicap to the general acceptance of this type of operation is the fact that it can be done only by a rhinologist. Since the condition is equally an ocular ailment and ocular treatment must accompany the nasal, the method will hardly be popular with surgeons doing only ophthalmology, as the difficulties of the necessary close cooperation with the rhinologist are often too great.

The one great drawback to the third method, extirpation or destruction of the sac, according to its opponents, is the subsequent tearing. This is practically the only objection ever raised, and strangely enough there seems great disagreement as to the frequency of this tearing and as to the inconvenience of it. The operation stands or falls on this factor. Valuable statistics would be those of a disinterested observer on a long series of cases in which the sac had been destroyed or removed, to determine whether tearing was observable and annoying. However, since the latter quality is purely subjective answers could at best be only relative.

Wherein then lies the future of the treatment of chronic dacryocystitis? Operation apparently cannot be made ideal and probings and other treatment rarely succeed permanently. Obviously, hope here rests where the future of all medicine rests and that is in prophylaxis. Ascending infection is the underlying cause in practically all cases. This, in association with mechanical obstruction in the nose, gives ideal conditions for developing dacryocystitis, and the hope of prevention lies in the early care of nasal pathology.

L. T. P.

TATTOOING WITH GOLD CHLORIDE

The frequency with which corneal tattooing is rendered advisable by the presence of a leucoma depends to some extent upon the cultural level of the community. Thus, in an extensive practice, Paul Knapp of Bâle, who first suggested the use of gold chloride for this purpose two years ago, has only found four opportunities to use the method in the human subject; whereas Shimkin, in Palestine, has recently reported fifty cases.

Knapp's method consists of pressing a cotton swab saturated with two percent gold chloride solution against the corneal surface after removal of the epithelium. Staining with gold chloride is said to be decidedly superior in safety and in simplicity of technique to previous methods; but it is extremely important to neutralize the acid reaction of the drug, immediately before operating, with sodium bicarbonate under control of litmus paper. The reaction must remain weakly acid, otherwise the preparation loses its efficacy. A horn ring with a handle is used by the author* to protect the surrounding tissues from unintentional tattooing by spread of the solution.

Clear cornea or a thin scar is more easily stained than a dense leucoma, and satisfactory permanent results can not be obtained in very vascular scar

* Klinische Monatsblätter für Augenheilkunde, 1927, v. 79, Oct., pp. 433–449.

tissue. A very interesting physiologic phenomenon connected with the process is the tendency of the most superficial fibers of the parenchyma to become clear, while in the course of time the gold is stored up in coarser deposits within the corneal cells. This apparently represents a true migration of the precipitate, and is responsible for the fact that even after a prolonged period the result is commonly still satisfactory.

Scarification of the stroma is not approved by Knapp, who has found microscopically that every injury of the stroma interfered with precipitation or at least with adhesion of the gold deposit. He recommends that the initial staining shall be darker than is ultimately desired, because there is a slight softening of the tone in the course of time. Weaker solutions, shorter applications, and secondary applications of adrenalin produce browner tones, while stronger solutions, longer applications, and precipitation with tannin tend to develop a black.

W. H. C.

AUTHORS' REPRINTS

Beginning with this issue, each author of an original article will be furnished with twenty-five reprints of his essay without charge. The usual arrangement for supplying additional reprints at the author's expense will still be effective.

BOOK NOTICES

Modern ophthalmology. James Moores Ball, M.D., L.L.D., late Ophthalmic Surgeon to St. Louis City Hospital, etc. Sixth edition, revised and enlarged. Cloth, two volumes, royal octavo, 1547 pages, 24 colored plates, 624 text illustrations, some in colors. Philadelphia, F. A. Davis Company, November, 1927.

This book is so well known to English-reading ophthalmologists, and the notice calling attention to the fifth edition is so recent (September, 1926), that detailed account of its general features is not necessary. For this edition Dr. Arthur J. Bedell, of Albany, N. Y. has written chapter 31, on examination of the eye by means of the slitlamp. There are also sections on and references to gold and silver impregnation of the cornea, delivery of cataract by means of the Schwartz lens hook, treatment of lime burns of the eye, and treatment of sympathetic ophthalmitis by autoserotherapy and autohemotherapy. In a word, the book is well abreast of the advances in ophthalmology; and its established character for completeness, accuracy, and clear statement is fully sustained. The claim of its title page is made good; it is "a practical treatise on the anatomy, physiology, and diseases of the eye".

It might be thought that either for an oculist of moderate practice or for a general practitioner a two volume treatise was not necessary. But one whose experience of diseases of the eye has not been extensive will find these hundreds of illustrations the best substitute for clinical experience that he can secure. The index occupies 58 double column pages. There are also separate complete lists of the plates and illustrations. Any one who can use these tools of the student will find this an extremely valuable work of reference.

The colored plates include thirty-eight pictures of the ophthalmoscopic appearances of as many fundus conditions, forty of different external diseases of the eye, pictures of six of the most important bacteria found in conjunctival inflammations, and sections showing the topographic anatomy of the orbit. Oliver's card for testing near vision occupies one plate, and of the illustrations in the text, 22 are in colors, equalling some of the best illustrations of the kind that have appeared in books and magazines published in Europe.

This is a book that its possessors are the better for having and studying. Those who have not previously obtained it may well afford to secure this latest and best edition. It should be in every complete medical library.

E. J.

An introduction to clinical perimetry. H. M. Traquair, M.D., F.R.C.S. (Edinburgh), Lecturer on diseases

of the eye, Edinburgh University. Buckram, quarto (274 pp., 164 ill. 1 col. pl.). Saint Louis, C. V. Mosby Co., 1927.

This presentation of the subject has been limited to what the clinician is likely to find useful; and, as the author points out, "success in perimetry, as in many other forms of subjective examination, will not be attained by the use of the 'best' or the 'newest' instrument, but by the study and application of simple principles". The procedure described is that known as the "quantitative method". This is the method of Bjerrum. Rönne has developed it, and Berry had previously worked in this field.

This is an amplification of the Middlemore essay of the author, but was issued only within the year, the author's preface bearing the date of April, 1927. A brief introduction to the American edition by Dr. Meyer Wiener, of St. Louis, points out the rapid progress of perimetry in the last twenty years, although among ophthalmologists are many whose command and practice of it is still deficient.

The book consists of two parts. The first, divided into four chapters, deals with the normal field of vision, perimetric instruments, methods of examination, and the physiology of the visual field in relation to clinical perimetry. The eight chapters of the second part take up the pathological field, the interpretation of changes in the visual fields, and the following special relations of the fields: to the choroid and retina, glaucoma, the optic nerve, the chiasm, the suprachiasmal pathway, functional changes in the field of vision. There are also appendices, occupying eight pages, a bibliography of 329 titles, and a complete alphabetical index.

This book will be needed in every good working library of ophthalmology. No matter what method of field taking an ophthalmologist may employ, or whether he may be unwilling to learn and practice any method, the reading of such a treatise is necessary to make one acquainted with the present development of ophthalmic science. One who feels he should be excused from study of the recent methods and the wide significance of perimetry should feel it a duty to retire from ophthalmic practice. He should not hold himself out to the public as prepared to give advice in the most advanced and exact of medical specialties.

The illustrations are largely representations of visual fields reproduced from the records of clinical cases. The colored plate is a diagrammatic representation of the visual pathways from the retina into the central nervous system. The illustrations are all admirably executed and judiciously chosen. The quarto page is especially favorable for illustrations in which details are as important as are many of those showing visual fields. The plan of using vulgar fractions to indicate the distance at which the field has been taken and the size of the test object used seems more appropriate than the use of such fractions to indicate visual acuity. Thus 3/2000 indicates that for a test at 2000 mm. (2 meters) a 3 mm. test object has been used. This is scarcely subject to the misinterpretation that sometimes arises as to acuteness of vision and economic disabilities.

Traquair's descriptions of instruments and methods of examination are not confined to those that he prefers, although often his preference is indicated and reasons for it given. For the ophthalmologist who wishes to learn perimetry in his own practice, this book offers the experience and guidance of a master ready to advise on each point as it is raised, if once the arrangement and resources of the work are appreciated.

E. J.

Plastic surgery of the orbit. J. Eastman Sheehan, M.D., F.A.C.S. Cloth, 348 pages, illustrated. Published by the MacMillan Co., New York, 1927.

This book opens with a short preface by Prof. Pierre Sebileau, of Paris, followed by a longer author's preface. The large type and liberal spacing used make the reading of the text pleasant, but have the disadvantage of making the book unnecessarily large. It is divided into three parts:

Part I, anatomy and physiology, 57 pages. This is subdivided into seven chapters dealing respectively with the orbital cavity, its contents and covering; the eyelids, the lacrimal system; arteries and veins of the orbit, nerve supply of the orbit; the sympathetic nerve system; and the skin. This part contains nine colored plates and thirteen uncolored illustrations, and deserves careful study.

Part II, preparation, after care, skin grafts and general surgical considerations, 57 pages. This part is subdivided into seven chapters, viz: preoperative treatment, anesthesia incisions and sutures, postoperative care; skin grafts; the mucous membrane grafts; restoration of skin grafts. To the mind of the reviewer a knowledge of the above factors is as essential as the acquaintance with the actual operation to be performed. Valuable information may be obtained from a study of the twenty-three illustrations accompanying the text.

Part III, operative procedures, 214 pages. This consists of sixteen chapters describing various operations in and about the orbit, illustrated by 154 drawings and photographs and two colored plates. The operative technique is described in detail and is easy to follow.

Appendix A, written by Magill, London, deals with anesthesia, and appendix B is a warning against the use of paraffin in attempting to correct conditions in this region. There is an adequate index. This book can be justly recommended to those who wish to do plastic work about the orbit.

E. J.

Tuberculose de l' œil et de ses annexes. 293 pages, with 24 original figures in the text and 4 colored plates inserted. E. Rollet and A. Colrat. Paris, Gaston Doin and Co., 1927.

This monograph is one of a series issued by the same publisher under the title of "The Tuberculosis Library". Rollet has had a wide experience in ocular tuberculosis and its treatment, and has made many experimental researches in the subject. The book, reasonably well illustrated, represents a conscientious attempt to cover its field in a systematic manner, dealing in turn with the disease as it affects individual structures of the eye and related parts. The bibliography of 26 pages is valuable, although not complete. For example, it fails to mention several important papers by Finnoff. The authors have very decided views as to treatment with tuberculin. The very favorable report by Hippel on 243 cases of ocular tuberculosis treated with tuberculin is adversely criticised, the conclusion being that only 30 of these cases were really examples of uveal tuberculosis and that they offer no final ground for judgment as to the benefits derived from the specific method.

Rollet and Colrat do not conceal their preference for radiotherapy, with which they obtained good results in corneal, scleral, and uveal tuberculosis. As regards the uveal tract, the total dose absorbed is of 2 to 3 H in each series of sittings. Each series consists of five sittings given every second day and each having a duration of ten minutes. An interval of three weeks is allowed to elapse between the series.

The chapter on the uveal tract occupies forty percent of the text (102 pages). Tuberculosis of the retina and of the vitreous is dismissed in a chapter of five pages. The existence of tuberculosis of the retinal vessels as a distinct entity is apparently viewed with skepticism.

W. H. C.

A handbook of ophthalmology; 312 pages, with 12 plates, containing 41 colored illustrations, and 194 text figures. Humphrey Neame and F. A. Williamson-Noble. New York, William Wood and Co., 1927.

Intended for undergraduate students and general practitioners, this book is clearly written, beautifully printed, and abundantly illustrated. It fulfils its special purpose the better in that it omits all reference to the rarities of ophthalmology and makes only brief notes of the uncommon affections The technique of the usual methods of examination of the eye is described at some length.

An interesting feature of the volume is the fact that most of the very reliable and instructive colored illustrations were made by a London optical house which maintains a drawing department, on a commercial basis, for the use of ophthalmologists.

The chapter on ocular injuries might perhaps with advantage have been given in greater detail, inasmuch as many general practitioners are called upon to give emergency treatments for such injuries. For example, under removal of foreign bodies from the cornea, cocainization is vaguely spoken of, without advice as to the strength of solution to be employed. There may be safety, as far as the general practitioner is concerned, in the unqualified statement that, after a foreign body has been removed from the cornea, the affected eye should receive a drop of one percent atropin sulphate solution; but probably few ophthalmologists would consider it advisable to make this a routine procedure.

In the chapter on glaucoma, the student and general practitioner would profit by more definite statement of the important problem of differential diagnosis of this disease.

W. H. C.

Transactions of Section on Ophthalmology, American Medical Association, May 18 to 20, 1927. Cloth octavo, 404 pages, illustrated. Chicago, American Medical Association Press, 1927.

This is volume 38 of this series of transactions—a group of volumes that contain an important part of the history of ophthalmology since 1890, and many papers with which the alert progressive ophthalmologist will wish to be familiar. It may be too late for new members to secure the full set of these transactions; but the value of the future series is assured by what the Section on Ophthalmology has done in the past.

The volume is put out as "reprinted from the Journal" of the American Medical Association, but some of the papers and the eight committee reports in it have not been published in the Journal and some of them are accessible only in this volume. The number of papers is twenty-two, of which twenty-one are accompanied by remarks in discussion by seventy speakers.

Apparently the editor of the Journal of the American Medical Association assumes that any ophthalmologist who wishes to keep up with the progress of his specialty will have a copy of these Transactions; and that the mass of readers of the Journal who do not see these Transactions would not care to read in the Journal papers like the following: "Ocular phenomon produced by basal lesions of the frontal lobe", by Walter I. Lillie of the Mayo Clinic; "Cataract extraction, comparative results", by Walter R. Parker of the University of Michigan; "Local anesthesia in ophthalmic surgery", by C. S. O'Brien of the University of Iowa. These are in this volume but have not appeared in the Journal. In view of the very low price at which these Transactions are supplied, it does seem good sense not to incur the cost of circulating them in the Journal to readers who do not care for them in more convenient form.

E. J.

Die Bewegungen und die physiologischen Konsequenzen der Bewegungen eines zentralen optischen Nachbildes im dunklen Blickfeld. Gustaf F. Göthlin. Paper quarto, (70 pp., 3 pl.). Upsala, 1927.

This is a study of ocular movements and their physiologic effects after rotary and caloric stimulation of the vestibular apparatus, reported by Dr. Göthlin to the Royal Scientific Society of Upsala, July 2, 1927. It gives a complete account of his investigation presumably reported in physiologic literature, which has been directed to a better understanding of the results obtained by the so-called Bárány tests.

The results of these tests—the reactions to them—became of great importance for the light they threw on the coordination and effect of stimuli developed in aviation on the motor control and judgment of the aviator. A better understanding of the physiology of the central nervous system with regard to these coordinations must be

of great importance. It lies outside of the strict domain of ophthalmic practice, belonging rather to neurology; but the ophthalmologist who seeks a better understanding of the subject can turn to this work with confidence in his hope of obtaining assistance. The appended list of forty-nine titles in the literature opens up the way to further study.

E. J.

Practical Medicine: General Medicine, edited by Charles L. Mix, George H. Weaver, Lawrason Brown, Robert B. Preble, and Ralph C. Brown, Series 1927. Chicago, the Year Book Publishers, 304 South Dearborn Street.

This is a 740 page review of the periodical literature of the subject for the previous year. It is divided into four main departments, by five different authors; namely Infectious Diseases and Endocrinology; Diseases of the Chest; Diseases of the Blood and Blood-making Organs, Diseases of the Blood Vessels, Heart, and Kidney; and Diseases of the Digestive System and Metabolism. Most of the references are to papers written in the English language, although a few German authors are cited. The abstracts are rather frequently accompanied by brief comments by the editors, some of these comments being of a very practical character. Among the topics dealt with, the following may be mentioned as presenting some interest for the ophthalmologist: endocrinology, blood pressure, and nephritis. It seems rather surprising to find no systematic mention of syphilis in a volume on general medicine; but the reason is of course that this disease is dealt with in a special volume of the Practical Medicine Series.

W. H. C.

United Fruit Company, medical department. Fifteenth annual report, edited by William E. Deeks, M.D. Paper, quarto, (355 pp., 15 pl., and 32 ill.). Boston, published by the Company, 1927.

This volume brings together valuable reports on tropical medicine, in nine hospitals and dispensary and administrative districts of the West Indies, South America, Panama, and Central America. It gives the results of important observations on the transmission of malaria and the mosquitos that carry it on, snake bite and the good results of its early treatment by the Brazilian antivenin, and statistics of many diseases.

Of ophthalmic cases 342 are reported. Of these but two were cases of trachoma, with 99 of follicular conjunctivitis, and only five ocular tumors. There were seven cases of ophthalmia, with 636 gonococcal infections. Syphilis and tuberculosis are common diseases, but cases of ocular manifestations are not mentioned. Of the plates eight are beautiful reproductions of photographs of hospitals, others are of radiographs. The other illustrations mainly show cases, particularly skin lesions. Few corporations with large medical services are making such valuable contributions to medical science.

E. J.

CORRESPONDENCE

Interest in Refraction.

To the Editor: You may recall my paper on refraction read before our state academy here and published by you (p. 506). A very ordinary discourse, without anything new to the man of experience; but merely covering the matter in a systematic way for the benefit of younger men to stress its importance in every day practice of the average man.

I have had quite a "shower" of communications from every part of the country regarding this article. It occurs to me at this time, when a real revival of interest in this branch has such possibilities for good, that a series of short articles from different men on this subject will be eagerly read by younger men, who seem now to be beginning to grasp its importance.

Wm. W. Lewis.

St. Paul, Minnesota.

(Note by editor: Dr. Lewis has since accepted a suggestion by Dr. Jackson that discussion on the subject of refraction may well be taken up under the head of correspondence.)

ABSTRACT DEPARTMENT

Abstracts will be classified under the divisions listed below, which broadly correspond to those formerly used in the Ophthalmic Year Book. It must be remembered that any given paper may belong to several divisions of ophthalmology, although here it is only mentioned in one. Not all of the headings will necessarily be found in any one issue of the Journal.

CLASSIFICATION

1. General methods of diagnosis
2. Therapeutics and operations
3. Physiologic optics, refraction, and color vision
4. Ocular movements
5. Conjunctiva
6. Cornea and sclera
7. Uveal tract, sympathetic disease, and aqueous humor
8. Glaucoma and ocular tension
9. Crystalline lens
10. Retina and vitreous
11. Optic nerve and toxic amblyopias
12. Visual tracts and centers
13. Eyeball and orbit
14. Eyelids and lacrimal apparatus
15. Tumors
16. Injuries
17. Systemic diseases, including parasites
18. Hygiene, sociology, education and history

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1. GENERAL METHODS OF DIAGNOSIS

Garrow, Alexander. **Direct ophthalmoscopy in high myopia.** Brit. Jour. Ophth. 1927, July, v. 11, p. 343.

The reporter discusses the benefits derived by having the patients wear their correcting glasses in making a direct ophthalmoscopic examination in high myopia. If there is difficulty due to light reflection on the lens, this can be avoided by tilting the patient's glasses upward or to one side.

Delamere F. Harbridge.

Lauber, H. **A new method of detection of simulated blindness or amblyopia of one eye.** Klin. M. f. Augenh., 1927, v. 78, Supplement, p. 197.

The patient is placed before the vertical perimeter, a prism of sixteen or twenty degrees apex up before the alleged blind eye, apex down before the other eye. The test object is held at the lower end of the perimeter and the patient asked to indicate its appearance from below. If it is seen very peripherally, e.g., at seventy degrees, the alleged blind eye is seeing. For testing the horizontal meridian the prisms are placed base out. The patient sees crossed double images, and may convince himself of it by closing one eye. If e.g. the right eye is said to be blind he knows that he must not see the left point of fixation. If the test object is moved from the right side towards the median line, it appears at first near the right point of fixation, which the patient knows is seen with the left eye. He will not hesitate to indicate the appearance of the object, but has betrayed himself because he can see the object only with the right eye. For the double images are so far apart (eighteen degrees) that that of the right eye appears to the right of the point of fixation of the left eye.

Charles Zimmermann.

2. THERAPEUTICS AND OPERATIONS

Chaillous, J., and D'Autrevaux. **Experimental study of asepsis of ointments in general use in ophthalmology.** Bull. Soc. d'Opht. de Paris, 1927, no. 5, June, pp. 228-231.

Ointments of optochin, cadmium, iodocalcium, xeroform, and yellow oxide of mercury were placed upon the following media: bouillon, ordinary gelatin, ascitic gelatin, Sabouraud's gelatin, and glucose gelatin. The ointments were in tubes, and had been received several months earlier. All the media remained sterile. The same result was obtained with ointments containing thiosinamine, iodide of starch, and salicylate of soda, and also with yellow oxide of mercury in a jar. Positive cultures were obtained from various ointments which had previously been inoculated with bacillus subtilis and pneumococcus. *W. H. C.*

Passow, A. **Ocular symptoms with internal administration of medicaments acting on the parasympathetic nervous system.** Arch. f. Augenh., 1926, v. 97, Dec., pp. 432–459.

This paper as a whole does not lend itself to abstract, but some individual results may be referred to. The drugs used were atropin, extract of belladonna, eumydrin, scopolamin, pilocarpin, and physostigmin. The experiments were conducted upon physicians and patients. Extract of belladonna, given by the mouth, produced no noticeable effect upon the eyes. As with local administrations, scopolamin given by mouth had much greater effect upon the eye than atropin. Children had varying resistance to atropin. Internally administered, atropin had more rapid action on the ciliary muscle than on the sphincter of the iris, and the maximum action on the ciliary muscle was sooner reached than that on the sphincter. Of importance in cases of glaucoma is the finding that the action upon the eye of atropin administered internally is neutralized by the conjunctival instillations of pilocarpin. If caution is especially called for, extract of belladonna may be given internally to glaucoma patients in place of atropin. The paper is accompanied by a number of comparative tables.

W. H. C.

Rodin, Frank H., and McBride, Rexford W. **Milk injections: a study of body temperature and the leukocytes.** Amer. Jour. Med. Sciences, 1927, v. 74, pp. 511–519.

In the cases studied only one patient who had a normal temperature before the injection failed to show an elevation afterward, and of the twenty-six cases only two patients who already had a leucocytosis did not show an increase in the white blood cells. While in some cases the degree of leucocytosis and elevation of temperature did not seem to have any bearing on the results obtained, however, the authors' impression is that cases with a marked elevation of temperature and a corresponding increase in the leucocytes and the percentage of the polymorphonuclears give the best response to treatment.

The persistence of the temperature for about sixty hours and of the leucocytosis for from three to five days, added to the fact that the reactions to milk injections are very mild as compared with other kinds of nonspecific protein therapy, justifies the use of milk for such treatment. Furthermore, milk is easily procurable, is cheap, and is easily prepared for the purpose of treatment. In small doses it may be used for ambulatory treatment. For repeated injections it should be given every third or fourth day. *W. H. C.*

Weekers. **Test of resorption by the conjunctiva.** Bull. Soc. Belge d'Opht., 1927, no. 54, April, pp. 17–22.

Working experimentally with rabbits, Weekers found that a satisfactory indication of the rate of resorption by the conjunctiva could be obtained by injecting a standard quantity of physiologic salt solution stained with sodium fluorescide and observing the length of time required for the stain to disappear. He found that instillations of adrenalin retarded conjunctival resorption, while cocain notably accelerated resorption. Pilocarpin, eserin, and atropin seemed to be without effect in this regard. The author relates his investigations to a phenomenon recently studied by internists under the name of "cutaneous test for hydrophilia". *W. H. C.*

3. PHYSIOLOGIC OPTICS, REFRACTION, AND COLOR VISION

Lundsgaard, K. K. K. **Prognosis of advanced myopia.** Hospitalstidende, 1927, v. 70, pp. 549–559.

The author reviews 1547 cases of myopia of six diopters and more, occurring in his own practice. The object of the study is to obtain a basis for determining the prognosis of myopia in general. The results are intended for practical use in insurance examinations. Three complications are found, chorioretinitis, opacities of the vitreous, and detachment of the retina, the first by far the commonest and the last the rarest. The percentage of complications in women is much greater than in men,

and they occur earlier in life. The graph representing the frequency of complications in women in different decades shows a curve which rises with marked regularity with the advance of age; the corresponding curve in the case of men is more or less irregular. The higher the degree of myopia, the earlier and the more frequent are the complications, as could be expected. The cases are grouped in two classes according to occupation, one class including those who do mainly near work, and the other those who do not; complications are found in 38% of the first class and 56% of the second. From this it would seem that near work may not be the factor in the etiology of complications that it is usually supposed to be.

D. L. Tilderquist.

Schaaff, E. **Practical examination for color perception.** Arch. d'Opht., 1927, v. 44, Sept. p. 556.

The importance of determining the amount of color blindness present in individuals from an occupational standpoint is discussed. Eight percent of men distinguish colors more or less imperfectly. The writer has devised a set of ten plates with the Landolt broken ring figure worked out on each in color mosaics. These charts give a rapid method of detecting not only the completely color blind but even small degrees of impairment in color perception. They are so simple that they may be used for illiterates and children.

Morie J. Weymann.

4. OCULAR MOVEMENTS

Bourdelle, E. **Curious anomaly of oculomotor apparatus in the horse.** Bull. Soc. d'Opht. de Paris, 1926, no. 9, December, pp. 649–653.

The anomaly encountered by the author consisted of the presence, on the floor of the orbital cavity, of a supernumerary muscle, downward and outward, between the external and inferior recti, on the surface of the retractor muscle of the eyeball. Its fibers were more or less blended with the insertion of the inferior oblique in the lacrimal fossa. The author regards the accessory muscle as an aberrant bundle of the external rectus.

W. H. C.

Feilchenfeld, W. **Snellen's theory of the origin of convergent squint.** Klin. M. f. Augenh. 1927, v. 78, Feb., p. 243.

Feilchenfeld refutes the theory of paresis of the abducens as the cause of convergent squint, as advanced by Snellen and expounded by Ten Doesschate in the Klinische Monatsblätter für Augenheilkunde, vol. 77, p. 628. He upholds Donders' theory as to the increased demand upon accommodation when children commence to do near work, emphasizes the improvement or cure of strabismus by the permanent use of glasses, and sees a further argument in the frequent occurrence of divergent squint after operation.

Charles Zimmermann.

Hess, W. R. **Experimental as to the dynamics of the ocular muscles.** Arch. f. Augenh., 1926, v. 97, Dec. pp. 460–466.

On the basis of a quantitative method, previously described in 1908, 1911, and 1916 (see Ophthalmic Year Book, 1909, v. 6, p. 96, and 1912, v. 9, p. 93), for analysis of paralyses of the ocular muscles, Hess traces the disturbances of movement in a typical case of paralysis of the left superior oblique, so as to demonstrate the physiological action of the paralyzed muscle. The results are given graphically, in such a way as to demonstrate the power components yielded during normal function by the left superior oblique in different parts of the visual field. *W. H. C.*

Merigot de Treigny. **Case of voluntary nystagmiform trembling of both eyes.** Bull. Soc. d'Opht. de Paris, 1927, no. 1, Jan., pp. 9–10.

The author showed a youth of eighteen years, in the best of health, who could produce at will an undulatory "trembling" of both eyes, so rapid that it could not be counted by inspection. The trick was only possible when the patient looked straight ahead, had existed in early childhood, and was cherished by the patient as a source of social distinction. *W. H. C.*

Pellathy, A. v. **Almost complete lack of voluntary ocular movements.** Klin. M. f. Augenh., 1927, v. 78, May, p. 679.

A woman aged 34 years, when asked to move her eyes, was not able to turn them to the right, upward, or downward, and only slightly to the left. When she looked directly forward and her head was moved by the surgeon to the right or left, the eyes remained fixed, corresponding to the normal reflex movements. This showed that the ocular nerves, their nuclei, the connection of these with each other and with the center of association and the visual sphere, and the reflex movements were intact, but the voluntary movements dependent on the higher centers were lacking. The lesion was probably functional. *Charles Zimmermann.*

Uhthoff, W. **Squint amblyopia.** Klin. M. f. Augenh., 1927, v. 78, April p. 453. (5 ill.)

Uhthoff gives results of his observations of one hundred private cases of amblyopia in squint, with twelve illustrative clinical histories, discussing the question whether amblyopia is acquired (ex anopsia) or congenital. Characteristic were: lack of explanatory ophthalmoscopic findings, and one-sidedness with relatively good function of the remaining parts of the visual fields, with few exceptions. Including marked errors of refraction, about forty-three percent of the amblyopic eyes showed accompanying congenital anomalies of the eye, and this speaks in favor of the congenital origin of the amblyopia, particularly in unilateral strabismus existing from birth. Fifty-five percent had central scotoma (ninety percent of Uhthoff's clinical cases, reported by Heine, Klin. M. f. Augenh., 1905, v. 43, p. 18), and Uhthoff is convinced that central scotoma almost regularly occurs in cases of marked amblyopia, including fifteen percent without strabismus.

Twelve percent of the cases of unilateral amblyopia developed divergent strabismus of the amblyopic eye although this had only slight hypermetropia or emmetropia. Four percent of cases of unilateral amblyopia and convergent strabismus were in myopes of from twelve to fifteen years. Thirty-three percent were hereditary. The time of occurrence of convergent squint with amblyopia could be ascertained in fifty-eight cases, forty-one being in the first and second years, and eighteen at birth (congenital). Uhthoff has seen no convincing results from atropin treatment of the good eye and exercises. He believes that in many cases anopsia plays a leading rôle in the etiology of squint amblyopia.

Charles Zimmermann.

Weill, G., and Nordmann, J. **Congenital absence of abduction.** Arch. d'Opht., 1927, v. 44, Oct., p. 593.

Congenital absence of abduction is divided into two groups, those cases with retraction of the globe and those without. In the first group, abduction is accompanied by retraction of the globe and narrowing of the palpebral fissure. The underlying pathology here is localised in the orbit and may be a sclerosis of the external rectus muscle or faulty insertion of the internal or external rectus muscle or both. This condition must be regarded as congenital maldevelopment and not due to birth injuries. The principle of treatment to be followed is noninterference, for most cases are made worse by operation. Congenital absence of abduction without retraction is due to lesions of the nerve trunks or nuclei and may be accompanied by other paralyses. In these cases, when there is no fibrosis of the muscles, a tendon transplant will improve the condition.

Morie J. Weymann.

5. CONJUNCTIVA

Bhaduri, B. N. **Recurrent attacks of phlyctenular conjunctivitis synchronizing with menstruation.** Brit. Jour. Ophth., 1927, v. 11, August, p. 387.

This is a case record of a female, aged 40 years, who with each menstrual period had recurrent attacks of phlyctenules of each eye, lasting from eight to ten days. The cornea was not involved. There was no tonsillar or cervical gland trouble. During the intervals between menses the eyes were quiet. The condition entirely disappeared at the early onset of the menopause, two years later.

Delamere F. Harbridge.

Kalt, E., and Autier. **Pseudomembranous streptococcic conjunctivitis of unusual duration.** Bull. Soc. d'Opht. de Paris, 1927, no. 2, Feb., pp. 77–79.

The patient was a boy of ten years, and the right eye was severely involved, the left eye very mildly and briefly. The right cornea was destroyed after five days. A pure culture of the streptococcus was obtained. After repeated injections of antidiphtheric serum, at the end of three weeks iodized antistreptococcic vaccine was given by injection without results. The false membranes had been reproduced incessantly for eighteen months at the time of report. In discussion, Morax recalled a more or less similar case in which the patient was ultimately found to be suffering from primary actinomycosis of the conjunctiva.

W. H. C.

Ligertwood, Laura M. **Emphysema of the conjunctiva.** Brit. Jour. Ophth., 1927, v. 11, May, p. 233.

This is the case history of a man aged 40 years who was struck in the right eye by air under seventy pounds pressure from a pneumatic tool. The eye presented large and small bullae of the conjunctiva containing air. Within five days the condition returned to normal. No intraocular changes were found.

Delamere F. Harbridge.

Nida. **Bitot's syndrome and avitaminosis.** Bull. Soc. d'Opht. de Paris, 1927, no. 3, Mar., pp. 133–136.

A boy of ten years, living in a boarding school, where he was furnished an ample diet but indulged excessively in beans and in dishes prepared from dried vegetables, developed hemeralopia and epithelial xerosis. When twilight came on, he had to be led. On each bulbar conjunctiva, in the form of a triangle with its base against the temporal limbus of the cornea, and corresponding exactly to the palpebral aperture, was a deposit having the appearance of a thin layer of beaten white of egg. A scraping of this deposit showed the presence of squamous epithelial cells and bacilli. Both symptoms disappeared promptly under a diet rich in vitamins (raw beef, eggs, green vegetables, oranges, and cod liver oil).

W. H. C.

Stoewer, P. **Operation on nasal pterygium with restoration of semilunar fold.** Klin. M. f. Augenh., 1927, v. 78, Feb., p. 265.

The operation includes careful dissection of the pterygium and undermining of the conjunctiva with scissors to the caruncle, and formation of the folds by two sutures with double-armed threads inserted between limbus and caruncle and emerging near the caruncle. Thus the loops lie toward the cornea, the knots toward the caruncle. The formation of the fold produces recession of the wound edge of the pterygium, so that the wound forms an acute angular cleft, which is closed by a few fine sutures. No relapses were seen, as perhaps recession of the central part of the wound, corresponding to the neck of the pterygium, acts favorably.

Charles Zimmermann.

Wollenberg, A. **Tylosis of the conjunctiva.** Klin. M. f. Augenh., 1927, v. 78, suppl., p. 135.

A woman aged 19 years had acute follicular conjunctivitis, which resisted all treatment. Even excision of the exuberant retrotarsal fold gave only transient relief. Roentgen rays stopped the purulent secretion. About a year later the eye again became red, and an oval, flat, light protuberance of the size of a bean developed five millimeters from the lower nasal limbus on the sclera. It looked xerotic and was painful to touch. It was easily dissected out, appearing as a white mass, like cartilage. The epithelium was very much thickened and penetrated like papillae into the depth (acanthosis). After six months a similar swelling developed at the temporal side.

Charles Zimmermann.

Worms, G., Sourdille, G., and Lesbre, Ph. **Oculoarticular syndrome in the course of an epidemic of dysentery due to the Hiss bacillus.** Bull. Soc. d'Opht. de Paris, 1927, no. 1, Jan., pp. 21–28.

The authors saw a number of cases of conjunctivitis, and two of iritis,

secondary to abortive bacillary dysentery. The eye symptoms occurred from ten to thirty days after cessation of the intestinal phenomena, and were almost always coincident with an arthritic syndrome, and also in three cases with a urethral discharge. The conjunctival injection was often extremely intense, always predominated in the region of the cul-de-sac, and was several times complicated by small subconjunctival ecchymoses. The perilimbal injection was so pronounced as to give the appearance of a scleroconjunctivitis. The two attacks of iritis came on twenty days after recovery from conjunctivitis. They were plastic, painful, and accompanied by reduction of visual acuity and by hypotension. This complication lasted for twelve days. The author felt that he obtained more rapid recovery in some of the cases of conjunctivitis by the use of Hiss's specific dysentery antitoxin.

W. H. C.

6. CORNEA AND SCLERA

Duggan, J. N., and Nanavati B. P. **A family with blue sclerotics.** Brit. Jour. Ophth., 1927, v. 11, 1927, p. 445.

The authors have traced the family tree, in which a maternal parent was affected. There were three daughters and one slightly affected son. In the third generation there were five males and six females affected, all children of the three affected daughters. The slightly affected son had three unaffected male children. The cases were bilateral, and no evidence of fragilitas ossium, deafness, or syphilis could be obtained. Only one had an error of refraction, myopia. Four case reports of members of the family are given. There was a fifth case report of a patient with blue sclerotics and a blue discoloration of the face in no way connected with the hereditary group.

Delamere F. Harbridge.

Grüner, E. **Is parenchymatous keratitis diminishing since salvarsan treatment of the parental generation?** Arch. f. Augenh., 1926, v. 97, Dec., pp. 591–598.

From a study of the material of the Münich University eye clinic, the author concludes that as to the first decade of life such a diminution is taking place. *W. H. C.*

Kyrieleis, A. **Peripheral groove ectasia of cornea.** Klin. M. f. Augenh., 1926, v. 77, Sept., p. 388.

The author had an opportunity to see the patient, now aged 64 years, whose case he reported in 1921. Both eyes are without irritation and show a broad corneal opacity in the shape of an arcus senilis. At first an ectasia developed at the limbus with a dense network of blood vessels over a parenchymatous opacity of the cornea. Accompanying obliteration of the vessels the ectasia gradually flattened. This was followed by the formation of a groove which has now existed for four years. A new perforation in the left eye and atrophy of the anterior layer of the iris indicate that the process is not definitely ended. Such accidents may also occur in the future with the danger of secondary glaucoma.

Charles Zimmermann.

Löhlein, Walther. **Investigations as to the keratitis question, II.** Arch. f. Augenh., 1926, v. 97, December, pp. 401–431.

The author has repeatedly, as the result of animal experimentation, arrived at conclusions radically different from those of Grawitz. The latter's theory is that the cell increase in an inflamed cornea is not due to immigration of leucocytes, but to so-called cellular disintegration of the substantia propria of the cornea. Recently, Löhlein preserved in physiologic salt solution at 37, 50, and 60 degrees Centigrade respectively, and also in ten percent formalin solution, eyes freshly taken from slaughtered pigs; and then transplanted into rabbits (animal "hosts") pieces of cornea from these various pig eyes. His experimental results are reported in considerable detail. He again concludes that the cell increase in a recently inflamed cornea is due to immigration of white blood cells and does not depend upon cellular disintegration of the substantia propria of the cornea. This result was arrived at regardless of whether the inoculated

tissue had or had not been heated to a degree which devitalized its tissue elements.

W. H. C.

Löwenstein, Arnold. **Experiments on rabbits as to the genesis of parenchymatous keratitis.** Klin. M. f. Augenh., 1927, v. 78, Supplement, p. 73. (8 ill.)

Löwenstein's experiments on rabbits gave the following results: Inoculation of the cornea with the American Nicol strains (particles of tumors of the testicles) does not produce parenchymatous keratitis. Spontaneous parenchymatous keratitis relatively frequently occurs in rabbits whose testicles have been infected for six or eight months. It is very similar to that in human congenital lues. It can be started in luetic rabbits by intracorneal injection of normal serum. Parenchymatous keratitis can be produced in rabbits with old lues after incision of the conjunctiva, and cutting of the superior rectus and its vessels. In spontaneous parenchymatous keratitis of the rabbit infected with lues, scleral infiltrations with round cells mostly around the ciliary vessels were found histologically. In the few cases of parenchymatous keratitis in human congenital lues examined anatomically, considerable cellular infiltrations were found around the anterior ciliary vessels, frequently leading to obstruction of these vessels with subsequent necrotic changes of the corneal tissue, until nutrition of these parts was resumed by supplementary vessels. Parenchymatous keratitis in man and spontaneous keratitis in luetically infected rabbits is not due to direct action of spirochetes, but to the above mentioned disturbance of nutrition. A similar conception explains sclerosing keratitis after scleritis (tuberculous), scrofulous corneal infiltrations, and trachomatous pannus.

Charles Zimmermann.

Merz-Weigandt. **Ribbon-shaped opacity of the cornea.** Klin. M. f. Augenh., 1927, v. 78, Feb., p. 205.

The author disinguishes between primary ribbon-shaped opacities caused by chemical, mechanical or thermic influences, and secondary opacities in eyes in which these influences do not occur, due to preceding pathologic changes in the corneal tissue, even if the affected eyes seem otherwise perfectly healthy. Two such cases are reported, in one of which the corneal sensibility was diminished. The author, therefore, thinks that such apparently healthy eyes have a lowered resistance due to nervous disturbance, either of sensitivity or of trophic origin due to affection of the sym pathetic nerve.

Charles Zimmermann.

Neame, Humphrey. **Parenchymatous keratitis in trypanosomiasis in cattle and in dogs and in man.** Brit. Jour. Ophth., 1927, v. 11, May, p. 209.

This is a report of the pathologic findings in keratitis in trypanosomiasis in a dog's eye. The contribution is illustrated by five excellent microphotographs and a bibliography of eleven articles. Trypanosomes were found in infiltrations of the substantia propria, in masses of inflammatory cells in the anterior chamber, the ciliary body, and the pectinate ligament. The condition is a local manifestation of a blood infection, the lesions being due to the immediate action of the organisms or their toxins.

Delamere F. Harbridge.

Remky, Erich. **Posterior corneal embryotoxon (Axenfeld).** Klin. M. f. Augenh., 1927, v. 78, April, p. 512.

Remky observed in the left eye of a man aged twenty-three a narrow greyish-white band on the posterior surface of the cornea, about one millimeter from the limbus, emerging from the sinus at five thirty and extending to eleven o'clock, where it disappeared in the sinus. The case resembled the one first described by Axenfeld in 1920. It was undoubtedly a congenital anomaly, and the author discusses the possible mode of its development.

Charles Zimmermann.

Suganuma, S. **Rodent Ulcer in Trachoma.** Klin. M. f. Augenh., 1927, v. 78, Jan., p. 19.

Suganuma reports his clinical and anatomical examinations of five cases of rodent ulcer in trachoma. Clinically it cannot be distinguished from typical rodent ulcer.

Charles Zimmermann.

Terrien, F., Sainton, P., and Veil, P. **Two cases of Van der Hoeve's syndrome (blue eye, bony fragility, and deafness).** Bull. Soc. d'Opht. de Paris, 1927, no. 2, Feb., pp. 54–60.

The authors' two patients were mother, aged thirty-five years, and daughter, aged twelve years. The mother was very deaf, had very blue scleras, and had had several almost spontaneous fractures. Her teeth were friable. The daughter already had decidedly defective hearing, but the blue color of the eyes was less accentuated. Both patients had an abnormal laxity of the articular ligaments and exaggerated tendon reflexes. The mother stated that the daughter had had the blue scleras from the earliest days of life.

W. H. C.

Thomson, Ernest, and Ballantyne, A. J. **Krukenberg's spindle.** Brit. Jour. Ophth. 1927, v. 11, Sept., p. 450.

This refers to a case record of congenital bilateral pigmentation of the cornea, published in the Transactions of the Ophthalmological Society of the United Kingdom, 1903. The condition was observed in a myopic girl, aged twenty-two years, as minute chocolate colored dots. The largest and densest mass of dots was opposite the center of the pupil. Extending downward about one fourth the corneal diameter was a comet-like tail. As there was no evidence of inflammation, the case probably can be attributed to a developmental defect.

Delamere F. Harbridge.

Van Canneyt, M. J. **Contribution to the experimental study of ocular syphilis in the rabbit.** Bull Soc. Belge d'Opht., 1927, no. 54, April, pp. 29–36.

In a limited number of rabbits in which he was engaged in the experimental production of syphilitic keratitis by inoculation of an emulsion obtained originally from a human subject, Van Canneyt obtained an abnormal manifestation characterized by the formation of a tumor, located not far from the center of the cornea. This neoplasm, which was rich in spirochetes, was composed of reticuloadenoid tissue. It was sometimes bilateral. The author legards it as a lymphoid hyperplasia resulting from metaplasia of corneal or conjunctival cells of mesenchymatous origin; and he attributes its appearance to the virulence of the inoculated strain and to the special character of the tissue into which it was inoculated.

W. H. C.

Van der Straeten. **Corneal disease of dental origin.** Bull. Soc. Belge d'Opht., 1927, no. 54, April, pp. 12–17.

Van der Straeten reports four cases, in all of which there were trophic disturbances with corneal anesthesia, and each of which was promptly relieved by removal of molar or bicuspid teeth which carried apical abscesses or cysts. In each instance the dental lesion had caused no pain and was only revealed by radiography.

W. H. C.

Verderame, F. **Action of the pupil in keratoconus.** Klin. M. f. Augenh., 1927, v. 78, suppl., p. 145.

In five patients with partly bilateral keratoconus, and hypertrophy of one or both lobes of the thyroid gland, the author found that upon instillation of cocain the pupil of the eye with keratoconus did not dilate so readily or so widely as that of normal eyes or of the control eye. Adrenalin one percent produced mydriasis in only the eye with keratoconus; atropin one-half percent produced mydriasis of the same degree. In accordance with experiments on animals, in which the inhibitory action of the central sympathetic had been weakened, the author ascribes these phenomena to inhibited innervation of the sympathetic nerves by pressure of the enlarged thyroid gland.

Charles Zimmermann.

Wiedersheim, O. **Experiments on rabbits as to the effect of optochin on regeneration of the corneal epithelium.** Klin. M. f. Augenh., 1927, v. 78, Supplement, p. 45. (1 ill.)

According to Wiedersheim's experiments, hourly instillations of optochin retard regeneration of corneal epithelium by from twenty-four to seventy-two hours in comparison with the control eye not so treated. While the latter showed only a slight grey hue, after healing of the defect, the optochin eye presented a considerable greyish-white opacity.

Charles Zimmermann.

7. UVEAL TRACT, SYMPATHETIC DISEASE, AND AQUEOUS HUMOR

Busacca, A. **Fat infiltration of the epithelium of the ciliary body.** Klin. M. f. Augenh., 1927, v. 78, April, p. 529. (1 ill.)

A girl aged nine years showed yellowish grey fungoid masses behind the lens, diagnosed as glioma retinae and anatomically studied after enucleation. The stroma of the iris, the anterior layer, the sphincter, and the epithelium of the ciliary processes presented infiltration by fat drops.

Charles Zimmermann.

Dollfus, M. A. **Special type of iris degeneration.** Bull. Soc. d'Opht. de Paris, 1927, no. 4, April, pp. 170–172.

The patient was a diabetic, with right complete cataract, left incomplete. In inferior quadrant of the right eye, from four to eight o'clock, the anterior layer of the iris was completely dissociated from the posterior, and broken up into numerous minute fringes, distinctly separated from one another, some remaining adherent by their two extremities, others only adhering by a fine pedicle to the framework of the iris stroma or to the pupillary border of the iris. The latter kind floated in the aqueous humor, being displaced by sudden movements of the eyeball. An earlier stage of the same development was seen in the same sector of the left eye.

W. H. C.

Duggan, J. N., and Nanavati, B. P. **A family with aniridia.** Brit. Jour. Ophth., 1927, Sept., v. 11, p. 447.

Aniridia as a familial disease is quite unusual. The authors report such an incident. The mother had nystagmus, poor sight, and probably aniridia. Four children, three boys and one girl, ranging in age from nine to seventeen years were affected. All were myopes and had nystagmus, except one in whom nystagmoid jerks could be obtained. One had interstitial keratitis, another opaque subluxated lenses and buphthalmos, and one a patch of choroidal atrophy. In no case could suspensory ligament, ciliary processes, or pigmentary disturbance in the fundus be seen.

Delamere F. Harbridge.

Franceschetti, A. **Ectopia of lens and pupil (congenital) as recessive hereditary affection, and its manifestation through consanguinity.** Klin. M. f. Augenh., 1927, v. 78, March, pp. 351. (2 genealogical trees.) (See Section 9, Crystalline Lens.)

Jaeger, E. **Sympathetic ophthalmia, with histologic examination of the second eye.** Klin. M. f. Augenh., 1927, v. 78, May, p. 613.

A woman aged 40 years affected with tetany was operated upon for cataract of the right eye. Incarceration of the iris followed. Her vision was 5/12 after discission two months later. After four months she returned with inflammation of the left eye, which had commenced two months previously. There were abundant yellowish precipitates, partly confluent. The iris was yellowish and hyperemic, but showed no synechiae. Tuberculin test and Wassermann were negative. Light projection was uncertain. In the right eye were slight precipitates on Descemet's membrane. After a year the patient returned and asked for enucleation of the left eye. The right eye was without irritation, vision 5/8. Automatically the left eyeball presented a marked anterior fibrinoplastic uveitis, foci of round cells in the choroid, absence of leucocytes, infiltration of the sheaths of the retinal vessels, and dense accumulation of the plasma cells in the layer of nerve fibers. It gave the impression of an infection which most probably had reached the eyeball through the ciliary vessels.

Charles Zimmermann.

Tournay, Auguste. **Normal anisocoria in extreme lateral deviation of the eyes.** Arch. d'Opht., 1927, vol. 44, Sept., p. 574.

In the monocular examination of forty young women twenty-five showed a miosis in extreme adduction. In extreme abduction the same number showed dilatation of the pupil with binocular vision, as long as the lateral deviation was not so extreme that the

bridge of the nose would cut off the vision of the more distant eye. The abducting eye showed dilatation and the adducting eye showed miosis.

Morie J. Weymann.

Velhagen, J. K. **Essential Iris atrophy with ectopia lentis.** Klin. M. f. Augenh., 1927, v. 78, suppl., p. 156.

In a man aged 46 years, without any organic disease or hereditary affliction, an incomplete dislocation of the lens developed insidiously in both eyes, with symmetric atrophy of the lower half of the anterior layer of the iris. There were defects of the pigment layer and incipient hole formation. In consequence of the atrophy the pupils lost their roundness and there was a decrease of motility. The pupillary fringe was a typical example of the depigmentation, described by Axenfeld, as frequent in senile cataract even without other atrophy of the iris. There was also peripheral choroiditis with concentric defect of the visual field. Glaucoma and inflammatory signs were not demonstrable.

Displacement of the lens has not so far been described in any of the cases of hole formation. Holes have been observed without any other disease after affections of the uvea, preceded or followed by hypertension. In the present case of displacement of the lens (of no uniform etiology) the primary cause is a disturbance of nutrition, which the author believes to be most accurately termed "anterior uveal dystrophy." *Charles Zimmermann.*

Weisner, E. **Spontaneous detachment of the choroid with normal tension in sympathetic ophthalmia.** Klin. M. f. Augenh., 1927, v. 78, suppl., p. 150.

Seven weeks after cataract extraction on the right eye of a man aged 67 years, with early discission and incarceration of the iris, serjous sympathetic ophthalmia with detachment of the choroid began in the left eye. Under intravenous injections of cyclotropin 0.05 gms, aspirin by mouth, and enucleation of the shrunken first eye, the eye recovered with vision of 5/12. At the last examination progressive opacity of the lens was found. The tension was normal. *Charles Zimmermann.*

Wood, D. J. **A case of sympathetic ophthalmitis.** Brit. Jour. Ophth., 1927, v. 11, May, p. 217.

This is the case record of a girl aged nine years who suffered a perforating corneal ulcer in the course of gonorrheal conjunctivitis. Following a conjunctival flap operation, although the eye remained soft, it was quiet and presented no corneal precipitates. About one month after coming under observation, sympathetic ophthalmia developed. Early diagnosis was materially aided by the use of the slit-lamp, showing fine corneal precipitates and cells in the aqueous. The injured eye was removed and the usual treatment instituted with the addition of injections of an autoserum. To this latter the author ascribes considerable benefit. Recovery followed in eleven weeks with a vision of 6/5. The sympathogenic eye was sectioned and a pathologic study made. Six microphotographs of these sections are given. The choroid showed typical changes. The iris was changed into a mass of lymphocytes, epithelioid cells, and giant cells. The ciliary region showed marked changes.

Delamere F. Harbridge.

Worms, G., Sourdille, G., and Lesbre, Ph. **Oculoarticular syndrome in the course of an epidemic of dysentery due to the Hiss bacillus.** Bull. Soc. d'Opht. de Paris, 1927, no. 1, Jan., pp. 21–28. (Iritis and conjunctivitis developed. See section 5, Conjunctiva.)

Duke-Elder, W. S. **Circulation of the intraocular fluids.** Brit. Jour. Ophth., 1927, v. 11, Aug., p. 388.

This is an elucidation of some of the observations made by Priestley Smith on this investigator's thesis published in the British Journal of Ophthalmology. The original contribution was not offered as a theory but only as a working hypothesis without any claim to infallibility. If substantial evidence can be brought against it, then the investigator hopes to have the pleasure of building up another. But if the aqueous humor possesses all the very definite and complicated chemical and physical properties of a dialysate, both in its normal condition and in variations from

the normal, if it can be shown, not to be in "supposed osmotic equilibrium", but to fulfill, in experimental fact, the complex and peculiarly exacting hydrostatic, osmotic, electrical, and chemical conditions required by a system in thermodynamic equilibrium with capillary plasma, and if at the same time no adequate objection is put forward or no unassailable alternative explanation is advanced, there seems to be no valid reason at the present time against the adoption of such a working hypothesis.

Delamere F. Harbridge.

8. GLAUCOMA AND OCULAR TENSION

Duke-Elder, W. S. **Pathologic diffraction halos.** Brit. Jour. Ophth., 1927, v. 11, July, p. 342.

As intraocular fluid is forced into the substance of the cornea in states of raised tension, in the same manner as the blood of a hyphema, fluid appears to collect in the corneal lamellae beneath Bowman's membrane, accumulating as droplets and inducing edema of the corneal epithelium. Light passing through the cornea is diffracted by these droplets. The validity of this theory is greatly strengthened by the personal experience of the reporter. During an attack of photophthalmia he observed a distinct halo round the street lamps. These halos were extremely beautiful, and were composed of inner rings of blue and violet and outer rings of yellow and red, with a broad band of green in between. They were of the glaucomatous type. The angular diameter of the red ring measured 12°. The halos remained about forty-eight hours, gradually fading. This would appear to correspond with disappearance of the droplets of edema.

Delamere F. Harbridge.

Dupuy-Dutemps, L. **Pulsating exophthalmus with glaucoma. Ligature of the internal carotid.** Bull. Soc. d'Opht. de Paris, 1927, no. 3, March, 136–143.

(See section 13, Eyeball and Orbit.)

East, A. Gerard. **Holding the conjunctival flap in sclerocorneal trephining.** Brit. Jour. Ophth., 1927, v. 11, July, p. 345.

The author illustrates his method of making a conjunctival incision in doing an Elliot trephining operation, which has proved quite satisfactory. Instead of the usual curved flap incision, he makes an oblique incision in the conjunctiva and holds the flap away with a strabismus hook. Sutures are unnecessary and good filtration is obtained.

Delamere F. Harbridge.

Fremont-Smith, Frank, and Forbes, Henry S. **Intraocular and intracranial pressure.** Arch. Neurol. and Psychiat., 1927, v. 18, Oct., pp. 550–564.

The authors' experiments show that, although the intracranial and the intraocular pressures are not directly dependent on one another, changes of hydrostatic or of osmotic pressure induced in the blood produce a parallel change in pressure in the eye and in the cranium, or, in the words of Claude Bernard, parallel "response to variations in the internal environment." These observations serve to emphasize again the similarity in the mechanisms for formation and for absorption of intraocular and intracranial fluids, and to indicate that these mechanisms are fundamental in the fluid exchange of the body. *W. H. C.*

James, R. R. **Pedigree of family showing hereditary glaucoma.** Brit. Jour. Ophth., 1927, v. 11, Sept., p. 438.

This is a family tree showing three generations in which there were eight members affected—three males and five females. In the first generation the maternal parent and a brother and his wife were affected. In the second generation, of nine children, three females and two males were affected, two males and two females unaffected. In the third generation, two males were unaffected. The reporter relates his personal observations on six of the cases. *Delamere F. Harbridge.*

Koyanagi, Y. **Alteration of intraocular pressure by weights applied to the eye.** Klin. M.f. Augenh., 1927, v. 78, May, p. 616.

The author shows the difference of the pressure curves if the cannula of the manometer is inserted into the anterior chamber from those by intravitreous introduction. He attributes this to obstruction of the cannula by the gelatinous vitreous. Hence, he thinks the method which Suganuma employed (Klin. M.f. Augenh., Dec., 1926) does not give exact results. The author never found an increase of albumen contents of aqueous and vitreous after hypotension produced by posterior sclerotomy in rabbits, which is in opposition to the statements by Ichikawa and Sugasawa of increased secretion of the intraocular fluids after diminished intraocular pressure.

Charles Zimmermann.

Lagrange, Felix. **Ocular hypotony, its causes, dangers, and treatment.** Bull. Soc. d'Opht. de Paris, 1927, no. 2, Feb., pp. 81–106.

The author defines ocular hypotony as the condition of an eye in which the tension has fallen to fifteen millimeters and below (Schiötz tonometer). He regards hypotony as constituting a great danger for the eye which presents it. He states that the symptom exists frequently in eyes which are still good, in the incipiency of progressive lesions, and that these are usually myopic eyes. Hypotony is said to exist in at least twenty-five percent of cases of myopia above ten diopters. As its principal dangers are enumerated (1) visual disturbances of retinal origin, (2) hemorrhages, and especially those from small vessels surrounding the macula, (3) detachment of the retina, and (4) so-called choroidal cataract. As treatment the author mentions colmatage (pericorneal cauterization). Twenty-nine illustrative cases are given, in twenty-two of which the tension was raised to normal by this treatment. The discussion was in the main unfavorable to the author's contention. Bailliart considered that fifteen millimeters was a normal figure, that two tonometers, both excellent, might vary two millimeters in their record, and that with the same apparatus at the same examination the same operator might have a variation of two millimeters in the results obtained. (See also American Journal of Ophthalmology, vol. 10, p. 870.) *W. H. C.*

Schmidt, Hans. **Experiences with cyclodialysis at the eye clinic of the University of Erlangen from January, 1921, to November, 1926.** Klin. M.f. Augenh., 1927, v. 78, March, p. 389.

Cyclodialysis was performed sixty times on fifty-one eyes. In almost fifty percent of the cases hypertension was reduced to normal tension. The operation is said to be almost without danger for the eyeball, can be repeated three or four times, and permits other operative methods. It is indicated especially in glaucoma simplex.

Charles Zimmermann.

9. CRYSTALLINE LENS

Cousin, G. **Hyphema secondary to cataract operation.** Arch. d'Opht. 1927, v. 44, Sept., p. 552.

Hyphema occurred in seven per cent of patients as a postoperative complication and was more frequent in women, and in patients with high blood pressure or diabetes. The hemorrhage came from the corneoscleral section, and not the iris, for it was present just as often when iridectomy was not done. It occurred from the third to the tenth day after operation and was probably due to direct or indirect traumatism in most cases. It is recommended that a metal guard be placed over the dressing for the first ten days to diminish the frequency of injury and hemorrhage.

Morie J. Weymann.

Cruickshank, M. M. **Complications following 4,000 cases of cataract extraction.** Brit. Jour. Ophth., 1927, v. 11, June, p. 275.

The cases composing this series represent the work done in three seasons of seven weeks each. Careful notes on all were taken. While a strong advocate of the intracapsular method, it was not necessarily the operation of choice in every case. In addition to juvenile, congenital, and secondary cataracts, which Smith considers unsuited for the intracapsular operation, the author includes the buphthalmic type, double cataract in patients aged 35 to 50 years

with resistant zonular fibers, glaucomatous cataract, traumatic cataract, and cases in which legitimate pressure fails to dislocate the lens. In order to appreciate fully the value of the observations made, one should consult the original contribution. Vitreous loss following the lens occurred in 9.38%; slight iris prolapse 5.63%; sepsis 1.58%. In the matter of doing an iridectomy, there were fewer losses of vitreous and prolapse of the iris in those cases in which a peripheral iridectomy was done. If Barraquer's technique is followed, the eye well under the influence of atropin, and the lens tumbled, the author is satisfied that an iridectomy is not essential. *Delamere F. Harbridge.*

Dörfl, E. **Cataract extraction in congenital coloboma of iris and in microphthalmos.** Klin. M. f. Augenh., 1927, v. 78, Feb., p. 257.

Three cases of cataract extraction on six eyes affected with iris coloboma are reported. The extraction downward with suture of the conjunctiva after flap incision proved to be beneficial. The four cases of microphthalmos again showed the vulnerability and constitutional deficiency of microphthalmic eyes in which spontaneous iridocyclitis, detachment of the retina, and phthisis frequently occur. The operation is only to be advised in great impairment of sight, when the patient has nothing or very little to lose by the operation. In spite of prolapse of the vitreous, the capsule must be opened and the lens extracted with Jaeger's spoon. If the cornea is very small it will only be possible to remove the lens in pieces.
Charles Zimmermann.

Franceschetti, A. **Ectopia of lens and pupil (congenital) as recessive hereditary affection, and its manifestation through consanguinity. (2 genealogical trees.)** Klin. M. f. Augenh., 1927, v. 78, March, p. 351.

The histories of two families are reported, showing familial occurrence of congenital ectopia of the lens and pupil. In spite of the mostly poor vision there was never nystagmus. The pupillary fringe as a rule was completely absent. The constant coexistence of ectopia of the lens and pupil with myopia speaks for a connection between these affections. The hitherto missing proof of recessive heredity of this anomaly is suggested by the consanguinity of the parents of both families.
Charles Zimmermann.

Handmann, M. **Leaf or rosette-shaped nontraumatic cataract of unknown origin.** Klin. M. f. Augenh., 1927, v. 78, Jan., p. 31.

Eleven cases examined with the slit lamp are reported, in patients between the ages of 32 and 69 years. Only one eye of each was affected. The opacities, in the shape of leaves or rosettes, were near the axis of the deeper anterior cortical layers near the nucleus. They are not congenital and are not traumatic. In one case they developed between the 34th and 44th years. The rosette figures seem to be due to part of the lens fibers becoming visible as the result of degeneration.
Charles Zimmermann.

Heesch, K. **Subconjunctival anesthesia.** Klin. M. f. Augenh., 1927, v. 78, June, p. 822.

Ten minutes before cataract extraction from one to two drops of a ten percent cocain solution were injected under the conjunctiva. This was followed by profuse hemorrhages during the operation, filling the anterior chamber, so that the field of operation was greatly disturbed. In some cases considerable hemorrhage into the anterior chamber occurred on the following days. At the pharmacologic institute at Schwalm, experiments showed that cocain solutions of higher percentage completely paralysed the muscles of the blood vessels so that adrenalin was ineffectual. Therefore this method cannot be recommended for cataract extraction. *Charles Zimmermann.*

S. Kusagawa. **The experimental production and inheritance of congenital cataract in chickens.** Graefe's Arch.. 1927, v. 118, p. 401.

After feeding with naphthalin, there occurred in the lenses of chickens radiating lines, beginning the third to

twenty-first day of the feeding and ultimately growing into a true opacity—the so-called naphthalin cataract. From the mating of normal chickens with chickens affected with experimental naphthalin cataract, total cataract and lamellar cataract occurred in their progeny. These chickens affected with congenital cataract could directly transmit through the females different varieties of cataract even to the third and fourth generation.

After direct injection of naphthalin into hens' eggs, many of the hatched out chickens had congenital cataract. Mating of these chickens when full grown with normal chickens resulted in direct transmission in embryos and new-born of the second and third generations.

The injection of naphthalin or alcohol into the chicken's egg caused retardation of the general development, but produced overgrowth of connective tissue and supporting fibers in the choroid and vessels.

The serum of the chicken of the first generation with congenital cataract, as well as the serum of chickens fed with naphthalin, was poisonous to the eye and to the whole body of other chickens, although the serum of the second and following generations of the same stock showed no such action.

Cataract is often complicated both with anomalies in the development of the bones in some situations and with pathological conditions in the internal secretory glands and hormones. The latter changes are also definitely hereditary. The genesis of experimental congenital cataract is dependent in the first generation upon direct intoxication with naphthalin or the penetration of the cytotoxin into the ciliary processes, although in later generations it may have a different basis. Observed from the standpoint of the experimental results, the genesis of congenital cataract can be explained by the poisoning in the first generation injurying the germ cell and so exerting a retarding action upon lens development. Transmission of these influences to further generations causes the production of hereditary cataract through so-called somatic induction.

Harvey D. Lamb.

Matkovich, V. Lussich. **Simplified postoperative treatment of cataract.** Ann. d'Ocul., 1927, v. 164, Nov., pp. 837–852.

The author has been struck by the great advances made in preoperative treatment and extraction of cataract throughout the years but thinks that postoperative care has not advanced. He has made extensive experiments in animals regarding the composition of the secretion following bandaging, and the reaction of eyes treated postoperatively with and without bandages. Having become convinced that progress was better without a bandage, he has recently treated many cases with an almost airtight eye shield which permitted the patient to see through a central window. He no longer requires patients to remain in bed or especially quiet following operation, and contends that they are much happier and that their wounds heal more rapidly and with less reaction when treated by this method. He points out the disadvantage of a bandage and the advantages of his method.

L. T. P.

Pavia, J. Lijo, and Dusseldorp, M. **Performed conjuctival bridge in cataract extraction.** Ann. d'Ocul., 1927, v. 164, Nov., pp. 826–836.

This interesting contribution is entitled "Our operative procedure in cataract," a very broad and nondescriptive title. The method is as follows: Dilatation of the pupil is produced by instillation of cocain and homatropin in two percent solution several times preceding the operation. Anesthesia depends on deep injection of 2 c.c. of two percent novocain with a few drops of adrenalin and a subconjunctival injection above the cornea. To this is added an instillation of 4 percent cocain. A conjunctival bridge directly above the cornea, 9 mm. broad, extending from the limbus 10 mm. vertically on the temporal side and 5 mm. on the nasal side, is dissected. This bridge is as thick as can be made. Section of the upper half of the cornea follows. Apparently no iridectomy is performed, but one of the illustrations shows an iridectomy.

After opening of the capsule the lens is expressed by pressure at the lower limbus and counterpressure beneath the conjunctival bridge. Then each edge of the bridge is sutured to the bulbar conjunctiva at the limbus with one tie.

The operation is said to be simple and the advantage of a strong conjunctival bridge is pointed out. The authors follow the operation with a subcutaneous injection of two c.c. of boiled milk mixed with the contents of an ampoule of polyvalent antipyogenic vaccine as a preventive measure against infection. This injection is repeated on the second and fourth days after operation. In a hundred cases no loss of vitreous nor postoperative infection was noted.

L. T. P.

Pesme, Paul. **Opacities of the region of the anterior pole of the lens and their correlation with malformations of the pupillary membrane.** Arch. d'Opht., 1927, v. 44, Oct., p. 620.

Anterior pyramidal cataract, central polar punctiform cataract, and anterior capsular cataract resembling spots of candle grease are derived from inflammation of the pupillary membrane, most often due to hereditary syphilis. This inflammation attacks the vessels of the pupillary membrane during the second three months of intrauterine life and the areas attacked are not resorbed as they normally would be. Thus we have left on the surface of the lens these waxy spots of capsular remains. The toxins may invade the lens substance and then later clear lens grows in between the capsular remains and the affected cortex. This explains the opacities in the cortex which underlie and correspond to the remains on the capsule. If the toxic effect is manifest over a long period, the cortex is more deeply affected, and fusiform cataract results. The pigmentary remains in the lens associated with congenital opacities originate from retinal pigmentary epithelium which always wanders into the pupillary membrane along the vessels, but which normally disappears with them. In the event of inflammation of the pupillary membrane this pigment proliferates and is not totally resorbed. Thus one may have pigment deposits in the lens without having had a true intrauterine iritis with posterior synechia.

Morie J. Weymann.

Rötth, A. **Metastatic endophthalmitis after cataract extraction.** Klin. M. f. Augenh., 1927, v. 78, June, p. 823.

The cultural examination of the conjunctiva of a laborer, aged 62 years, affected with cystitis, twenty-four hours before operation, showed only staphylococci. Extraction was normal. After two days the wound edges were exactly adapted and not infiltrated, but the iris was gelatinous and there was exudation at the coloboma and at the root of the iris. The wound was opened and the anterior chamber irrigated, but endophthalmitis developed, followed by phthisis. The intraocular pus and the urine contained pneumococci, which were still present after five months. After the cystitis was cured the extraction of cataract in the other eye was uneventful.

Charles Zimmermann.

Weihmann, M. **Tonometry before cataract operations; and operating in high altitudes.** Klin. M. f. Augenh., 1927, v. 78, Jan., p. 43.

The author refers to the conclusions reached by Ferrer from his tonometric investigations in relation to cataract operations. Hypertension favors prolapse of vitreous. Therefore, extraction with iridectomy is recommended, and, in high degrees of hypertension, preliminary iridectomy. The author found in Mexico, 2200 meters above sea level, a special tendency to hemorrhage. He therefore uses adrenalin before the incision, which prevents or checks hemorrhage and lowers intraocular tension.

Charles Zimmermann.

10. RETINA AND VITREOUS

Abramowicz and de Mienicki. **The influence of lumbar puncture upon the retinal arterial pressure in syphilitics.** Arch. d'Opht. 1927, v. 44, Sept., p. 566.

Of nineteen cases of secondary and tertiary syphilis sixteen showed a fall of retinal arterial pressure within thirty minutes following lumbar puncture. In nine cases a high spinal fluid pressure

corresponded with a high retinal arterial pressure. In ten cases the retinal arterial pressure was almost normal in the presence of an increased spinal fluid pressure. *Morie J. Weymann.*

Evans, John N. **Study of langioscotometry.** Brit. Jour. Opht. 1927, v. 11, August, p. 369.

This contribution is additional to the author's preliminary report on this subject appearing in the American Journal of Ophthalmology, July, 1926. The former paper deals with the methods used, this later contribution with the details of results in an investigation of the scotoma which the retinal vessels seem to project. The basis of this report is twenty cases in which the scotomata were mapped.

In looking about for possible related factors and phenomena which may at some time be of assistance, many points are of the utmost interest. Beside the possible influence of the perivascular lymph space and all those near and remote factors modifying intraocular pressure, certain circulatory responses, the influence of the sympathetic, etc., we must not forget the avascular zone of the retina following the arteries and veins.

Twenty-four charts are displayed. *Delamere F. Harbridge.*

Gonin, J. **Operatives cures in retinal detachment.** Ann. d'Ocul., 1927, v. 164, Nov., pp. 817–826.

The author reports ten new cases of detachment of the retina treated by ignipuncture. These ten cases are not selected except as being the last ten coming under his observation. Five of them resulted in practically complete replacement of the detachment. He contends that the operation is effectual only in recent detachments, where a tear in the retina is visible and in such a position that it can be reached with the cautery. He stresses the importance of selection of suitable cases and the following of an exact technique. Reference is made to his former article in the Revue Générale d'Ophtalmologie, 1923. (And see Ophthalmic Year Book, vol. 20, etc.) *L. T. P.*

Heesch, Karl. **Ultramicroscopic studies as to the structure of animal vitreous.** (9 ill.) Arch. f. Augenh., 1926, v. 97, Dec., pp. 534–545.

At an average interval of three hours after slaughtering, cattle vitreous was studied with the immersion ultramicroscope. The findings of Thiessen and Baurmann as to the ultramicroscopic structure of the vitreous are confirmed. Generally of a finely filamentous character, the density of the fibers diminishes from the periphery to the center, while the length of the filaments increases. The densest grouping is found in the anterior portion of the eye, in the region of the ora serrata and the pars ciliaris. *W. H. C.*

Heine, L. **Contributions to the anatomy of the macula lutea. V. The macula in inflammatory conditions.** (2 pl. 2 ill.) Arch. f. Augenh., 1926, v. 97, Dec., pp. 502–513.

The author discusses several cases of injury affecting the posterior pole of the eye, and undertakes to explain the vulnerability of this region. The human eye is more exposed to injury than the eyes of some of the lower animals. Highly developed nerve structures easily undergo permanent disturbance of function. The foveal region has a poor blood supply. (In peculiar contrast with this point, however, the author suggests that the very free choroidal blood supply in the macular region exposes this area to greater risks from infection carried through the blood stream.) The author also thinks that infections of the anterior segment of the eye may, when the patient lies on his back, tend by force of gravity to be conveyed to the posterior pole.

W. H. C.

Kyrieleis, Werner. **Contribution to question of origin of retinal hemorrhages in purpura and septic diseases.** Arch. f. Augenh., 1926, v. 97, Dec., pp. 514–533.

Previous cases in the literature are summarized and a bibliography given. The author's patient, a man of twenty-nine years, had a general infection extending over many years, of a chronic

relapsing, rheumatic character, but later behaving as an acute sepsis. The autopsy revealed a septic tumor of the spleen and lung abscesses. The point of origin was probably chronic middle ear suppuration. The purpuric complication was of late appearance. The ophthalmoscopic picture included small hemorrhages, not very numerous, and usually sharply defined. There were no variations in the caliber of the retinal vessels, and no evidences of edema of the fundus. The microscopic findings are given. *W. H. C.*

Pines, N. **Arterial hypertension and retinal changes.** Brit. Jour. Ophth. 1927, v. 11, no. 10, October, page 489.

While having some experience in ophthalmology, the author is a general practitioner. His conclusions are: (1) Sclerosis of the retinal vessels is recognized first of all by loss of translucency of the vascular wall; other symptoms develop later. In a normal and healthy person this sclerosis may begin very late indeed, and may not be present even in advanced age, when the vessels of the other parts of the body are already stricken with arteriosclerosis, if the blood pressure be normal. (2) The same toxin which is the cause of essential hyperpiesis quickly develops arteriosclerotic changes in the retinal vessels, even at a young age, if the arterial hypertension continues long enough. Its action may cease, and clinically the general vascular system may recover completely, but the arteriosclerotic changes in the retinal vessels remain permanently. (3) There is some reason to believe that the toxin of essential hyperpiesis is prerenal in origin, but renal retinitis and arteriosclerotic retinitis are probably caused by different toxins. It is probable that there is some intimate connection between the state of the retina and the activity of the kidney (endocrine?).

Delamere F. Harbridge.

Scheerer, R. **Oguchi's disease with Mizuo's phenomenon outside of Japan.** Klin. M. f. Augenh., 1927, v. 78, June, p. 811.

A youth aged 18 years, with hemeralopia, had poor vision of his left eye from earliest youth. Vision was R. 5/6, L. 5/60. There was high hypermetropia with astigmatism. Each fundus was intensely whitish-grey, with the vessels almost black. After the right eye had been tightly closed for eight hours the fundus and vessels appeared normal and the choroidal vessels were visible. Adaptation was greatly diminished. After exposure to light for a few hours the right fundus again showed the discoloration like the left. The visual fields were normal. So far this condition has been observed only in Japan, and this is the first reported occurrence in Europe.

Charles Zimmermann.

Scheerer, R. **Rudimentary pigment degeneration of retina with symmetric homonymous ring scotoma.** Klin. M. f. Augenh., 1927, v. 78, suppl., p. 165.

The degeneration seemed to commence at one place and to progressively surround the disc and the macula, finally forming a ring with corresponding growth of a small scotoma to a ring scotoma. Hemeralopia, which seems to be independent of the changes in the pigment epithelium, because it precedes the other symptoms, was absent in the first case. Two other similar cases are reported. The author concludes that exact investigation of the course and extent of hemeralopia may yield prognostic hints on the course of the individual case.

Charles Zimmermann.

Suganuma, Sadao. **The genesis of vascular tuberculosis of the retina.** Graefe's Arch., 1927, v. 118, p. 443.

Juvenile recurrent hemorrhage of the retinovitreous area is exclusively caused by tuberculous periphlebitis of the retina. As a rule this is primary in the eye. The tubercle bacilli are brought to the eye by the blood from other parts of the body, are transferred probably in the ultracapillary part of the vessels to the perivascular lymph space, gather in the most favorable places, and produce specific nodules around the veins. Exceptionally it is possible that tuberculous periphlebitis of the retina is secondarily derived from disease foci in the anterior portion of the eyeball.

Harvey D. Lamb.

Uhthoff, W. **Comparison of embolic and thrombotic processes in the retinal vessels and in those of the brain.** Klin. M. f. Augenh., 1927, v. 78, Suppl, p. 1.

The arterial circulation of the retina resembles very much that in the basal arteries entering into the brain substance and the larger ganglia, both being terminal arteries, while the arterial supply of the cerebral cortex, on account of anastomoses, has no analogy in the retina. Like transient obscurations of vision, transient functional cerebral defects (hemiparesis, vertigo, etc.) are apparently due to disturbances of arterial circulation, which Uhthoff attributes in fifty percent to organic changes of the arterial walls. He believes that, in agreement with obstruction of the central retinal artery, which he judges in about thirty percent to be due to embolism, embolism of the cerebral arteries is much less frequent than thrombosis due to alterations of the arterial walls (arteriosclerosis). The disturbances in embolic and thrombotic occlusion of the cerebral arteries generally occur suddenly, as in the retinal artery, and hemorrhage infraction as a rule is lacking, just as in the retina. On account of the secondary necrosis, after from one to two days the lack of function is irreparable, just as loss of vision follows ischemic opacity of the retina of from twelve to twenty-four hours. Syphilitic endarteritis of the retina is much less frequent than that of the brain. Specific disease of the retinal arteries may frequently be complicated by syphilis of the cerebral arteries, but not vice versa. Functional disturbances due to thrombosis of the retinal veins find only a limited analogy in the pathology of the cerebral veins, and there is almost no relationship between thrombosis of the cerebral sinuses and thrombosis of the retinal vein. *Charles Zimmermann.*

Uhthoff, W. **Hemianopsia and scintilating scotoma.** Klin. M. f. Augenh. 1927, v. 78, March, p. 305. (5 ill.)

The author describes seven cases of scintillating scotoma in which a permanent defect followed the last attack. This is a rather rare occurrence. In a part of the cases the anomaly diminished to a certain degree; in one the disturbance subsided after two weeks. Subsequent headaches on the side opposite to the scintillating scotoma accompanied all cases, but there were no ophthalmoscopic changes. The hemianopsia defects were incomplete, involving only a part of the visual half, or were relative for colors. Generally the typical homonymous scintillating scotoma is due to a transient disturbance of circulation which successively attacks the vascular areas of the central visual paths, most probably a migrating vascular spasm. Uhthoff considers the region of the cortical visual center in the occipital lobe, in the area of the termination of the posterior cerebral artery, the occipital artery, and the calcanean artery, as the seats of the disturbance. The successive spasms of the terminal branches of these arteries elicit at first symptoms of irritation and later of defect from local anemia of the brain, which when lasting too long may have permanent results. There is no doubt that the cerebral vessels are subject to vasomotor innervation.

Charles Zimmermann.

NEWS ITEMS

News items in this issue were received from Drs. Wm. T. Davis, Washington, D. C.; J. Ivimey Dowling, Albany, N. Y.; J. H. Dunnington, New York City; W. H. Lowell, Boston; M. P. Motto, Cleveland; G. Oram Ring, Philadelphia; G. H. Shuman, Pittsburgh; Chas. P. Small, Chicago; and G. M. Van Poole, Honolulu. News items should reach **Dr. Melville Black,** Metropolitan building, Denver, by the 12th of the month.

Deaths.

The wife of Dr. George B. Jobson of Franklin, Pennsylvania, died recently.

Dr. J. A. Kearney died suddenly on November 27, 1927. At the time of his death Doctor Kearney was attending ophthalmologist to the New York Polyclinic and Gouverneur Hospitals.

Dr. John C. Dixon, Connellsville, Pennsylvania, aged forty-three years, ophthalmologist and otolaryngologist, died suddenly at his home, November 27, of heart disease. He was a graduate of the University of Pittsburgh.

Dr. Joseph A. Heasley, Grand Rapids, Michigan, aged fifty-nine years, at one time professor of ophthalmology, Grand Rapids Medical College, died October 31st, of heart disease.

Dr. Aristoph Spare, Chicago, aged fifty-five years, clinical associate in ophthalmology, Rush Medical College, died November 21st of coronary thrombosis and angina pectoris.

The Saint Louis Ophthalmic Society, at its October and November meetings respectively, adopted memorial resolutions with regard to its late members, Dr. Edward Henry Higbee, Junior, and Dr. Frank L. Henderson.

Miscellaneous.

An illustrated article in the November "Scientific American" on "Evolution of the human eye" sums up many years of work on this subject by Dr. Thomas H. Shastid of Superior, Wisconsin.

The Board of Governors of the Episcopal Eye, Ear, Nose, and Throat Hospital, of Washington, D. C., at its last meeting voted to affiliate with the medical center which is to be grouped around the Garfield Memorial Hospital.

The Journal of the American Medical Association recently reported that two swindlers who had been working the cataract game among rural citizens in the middle west were arrested, December 2, and turned over to the sheriff at Waterloo, Iowa, where they were said to have been released under bonds. In one of their latest fraudulent operations they obtained $676. It is said that the sheriffs in ten counties in Illinois are rounding up victims of similar fraudulent operations in an attempt to identify these men, who are said to be Elliott Wilkinson and Roy L. Martin. Wilkinson is 31 years of age; he weighs 145 pounds, has black hair, brown eyes and dark complexion, and his left arm is tattooed with an arrow piercing a heart. Martin is described as being about 37 years old, 70 inches tall, 175 pounds in weight, and brown-eyed with dark hair and a light complexion.

Announcement has been made, following a joint meeting of the various boards of trustees, that about $2,500,000 is now available for the central building of Pittsburgh's medical center, which will house the Eye and Ear Hospital unit and the Presbyterian General Hospital unit. It is expected that the plans will be ready so that contracts for building may be let by July next.

The Commission to Study the Laws Relating to the Healing held its first session in Philadelphia, November 16 and 17, 1927. The purpose of the Commission is to study the laws of the Commonwealth of Pennsylvania and other states and countries relating to the education, examination, and licensure of persons practising the several schools of the healing art, the laws regulating the various schools of the healing art, and the administration of such laws; to frame a bill or bills for the proper regulation, control, and administration of these various schools, and of persons engaging or intending to engage in the practice of the healing art; and to make a report of its work, together with drafts of legislation it proposes, to the General Assembly of 1929, not later than February first. Various points of view were presented by representatives of the regular medical profession, and by homeopaths, osteopaths, chiropractors, naturopaths, and neuropaths. A representative of the optometrists appeared before the Commission to present a brief for their organization. It was ruled by the Commission, however, that their practice did not fall within the meaning of the designation "healing art", and that therefore their activities fell without the scope of the Commission, which does not undertake to make any recommendations altering the present legal regulation of optometrists in the Commonwealth of Pennsylvania.

Staff meetings had been discontinued at the Albany hospitals since the advent of Dr. Thomas Ordway as dean. This finally resulted in a reduced rating of the hospital by the American College of Surgeons. Continued insistence of Dr. Arthur Bedell and Dr. James Van der Veer that staff meetings be resumed brought about a conflict which resulted in the dismissal of these men by the hospital board of governors, September first, after more than twenty years of service on the staff. Since their dismissal staff meetings have been resumed and from now on the meetings will be held regularly every month.

The name of Dr. B. Kayser, of Stuttgart, who has long conducted the excellent abstract department of the Klinische Monatsblätter für Augenheilkunde, now appears on the cover of that journal as joint editor in place of the late Wilhelm Uhthoff.

In the University eye clinic in Breslau, his field of activity for many years, a meeting of a Silesian patriotic organization on October 21

was made the occasion for solemn unveiling of a bust of the late Professor Wilhelm Uhthoff. The sculpture is the work of Uhthoff's youngest daughter, and was provided by pupils and colleagues at the clinic. The memorial address was given by Uhthoff's successor, Professor Bielschowsky.

An ophthalmologic postgraduate course will be given in Tübingen April 16 to 21, 1928, under the leadership of Professor Stock of the Tübingen University eye clinic.

Attention is again called to the Ernst Fuchs fund, designed to afford assistance to the younger ophthalmologists of Vienna by financial aid in experimental investigations, helping defray the cost of publications, and furnishing money for attending congresses. Subscriptions can be sent to the secretary of the American committee for the fund, Dr. E. V. L. Brown, 122 South Michigan boulevard, Chicago, Illinois.

Societies.

A certificate from the American Board for Ophthalmic Examinations is required of applicants for membership in the Pittsburgh Ophthalmological Society.

Recently elected officers of the Ophthalmological Section of the New York Academy are Dr. Bernard Samuels, president, and Dr. Thomas H. Johnson, secretary.

At a recent meeting of the Southern Medical Association, Dr. Edward C. Ellett of Memphis was elected vice president.

At the suggestion of its president, Dr. W. W. Blair, the Pittsburgh Slit-lamp Society is devoting part of each monthly meeting to a study of A. Fuchs' two volumes on the histopathology of the eye. The excellent photomicrographs which the books contain are projected on a screen with a large Bausch and Lomb balopticon, and the legends are read aloud and discussed.

On November ninth, the Section on Ophthalmology and Oto-Laryngology presented the program of the evening before the Medical Society of the District of Columbia. Dr. John M. Wheeler of New York read a paper on "Eye conditions that concern the physician" and Dr. T. E. Carmody of Denver, on "Sinuses as seen by the internist and otolaryngologist". A buffet supper was served following the program.

The annual meeting of the Alumni Association of the Massachusetts Eye and Ear Infirmary was held at the University Club of Boston on November sixteenth, 1927. Dinner was served at 7 P.M. There were sixty-nine present. Dr. William F. Knowles presided. Dr. F. T. Tooke of Montreal was a guest and made a short address. Dr. Eugene Crockett, in whose honor the dinner was given, made a short address, speaking of the present needs of the institution, which has served the public for a century. Dr. George Derby thanked the trustees for the new building. Dr. Fred Spalding was elected president for the ensuing year.

At the last meeting of the American Academy of Ophthalmology and Oto-Laryngology, the American board of examiners for ophthalmology examined twenty-two candidates, and the American board for otolaryngology examined one-hundred and two candidates. The next convention of the Academy will be held in St. Louis October 15th to 19th, at the Hotel Statler. The program committee met in St. Louis, Sunday December 18th, to outline the plan to be followed at the 1928 convention. Any member wishing to appear on the program should address Dr. Harry Gradle of Chicago.

At the Section on Ophthalmology of the College of Physicians of Philadelphia on Thursday, December 15th, Dr. Sanford R. Gifford of Omaha, Nebraska, read a paper on "Diseases of the eye and adnexa due to fungi and higher bacteria".

Following a meeting of the Pittsburgh Ophthalmological Society at the Washington, Pennsylvania, hospital, on October 24th, at which Dr. John B. McMurray provided the entire scientific program, Dr. McMurray entertained the members of the society at dinner at the Washington Country Club. On invitation of Dr. McMurray, the society made a tour of inspection of the new Washington general hospital, which has a capacity of one hundred and fifty beds, cost nearly a million dollars, and includes the most modern and complete details of hospital construction. One of the outstanding features of the institution, which called forth unanimous admiration and praise from the visiting ophthalmologists, is the lavishness of the interior decorations and the home-like aspect of the appointments, which give an environment and an atmosphere more like a modern metropolitan hotel than like the traditional severity associated with hospitals.

The December meeting of the Chicago Ophthalmological Society was held in the recently completed building of the Chicago Eye, Ear, Nose, and Throat College.

At the meeting of the ophthalmological and otolaryngological section of the Cleveland Academy of Medicine November 25, Dr. A. B. Bruner was elected chairman and Dr. A. L. Stotter secretary for the coming year.

Personals.

Correction: Dr. Samuel A. Durr writes to correct a statement made in the October number of the Journal as to his office address. He is at San Diego instead of Los Angeles.

Dr. Clarence Loeb of Chicago, treasurer of the Ophthalmic Publishing Company and associate editor of the American Journal of Ophthalmology, has recently been confined to his home by illness, but is recovering.

Dr. W. E. Shackleton has returned from a three months' vacation in England.

Dr. J. M. Ingersoll is spending the winter in Miami, Florida.

Dr. W. L. Fox has been appointed to the ophthalmic division of the Cleveland city hospital.

Drs. W. L. Fox and Louis Ungar were recently appointed to the ophthalmic service of the Lakeside Hospital Dispensary, Cleveland.

Dr. L. Kacso has been reappointed to the ophthalmic service of St. Luke's Hospital, Cleveland.

Dr. James Stotter, Cleveland, has gone to Miami, Florida, where he expects to remain several months.

Dr. M. T. Metzenbaum has returned to Cleveland after several months spent abroad in postgraduate study.

Drs. H. V. Phelan and J. H. Ralston have been reappointed to the ophthalmic department of St. Alexis Hospital, Cleveland.

Dr. Roy B. Metz of the ophthalmic division of the Lakeside Hospital, Cleveland, returned recently from a six weeks' successful hunting trip in Florida.

Dr. A. H. Herr has received from the War Department notification of his appointment as captain in the Medical Officers' Reserve Corps.

Dr. John B. McMurray, of Washington, Pennsylvania, is secretary of the eye, ear, nose, and throat section of the Pennsylvania State Medical Society for the year 1927–1928.

Dr. John E. Weeks, after a month's stay at his country place at New Canaan, Connecticut, is motoring to Portland, Oregon, where he has recently built a house.

The Pittsburgh Ophthalmological Society is planning a testimonial dinner to Dr. Edward B. Heckel in honor of his fifteenth year as president of the society, and in recognition of his distinguished service to organized medicine. In addition to serving fifteen consecutive years as president of the Pittsburgh Ophthalmological Society, Dr. Heckel has been president of the Alleghany County Medical Society and president of the Pennsylvania State Medical Society, and is now chairman of the Board of Trustees of the American Medical Association.

Dr. Wm. C. Finnoff and his wife, Dr. Virginia Van Meter, of Denver, have just returned from a three months' trip abroad.

There has been a reorganization of the teaching staff of the Albany Medical College. Dr. A. J. Bedell has been succeeded by Dr. Harry Judge, who is now acting head of the department of ophthalmology in the college, and who is also acting head of the department of ophthalmology in the Albany city hospital.

Dr. Peter Kronfeld, who has been on the staff of the Meller clinic in Vienna, has accepted the post of assistant professor of ophthalmology at the University of Chicago. He will begin his duties January first.

After an absence of two years, Dr. and Mrs. Casey Wood have returned to this country. They stopped several weeks in Montreal while the doctor was doing some special work at McGill University. Two days only were spent in Chicago to greet old friends, and they then left for California where they will pass the winter months.

Colonel R. H. Wright of Madras, India, who for several weeks has been visiting in New York, Boston, Philadelphia, and Washington, sailed for London on December seventh.

Dr. E. M. Howarth, who has spent a year in eye, ear, nose, and throat work in New York City, has recently joined the firm of Drs. Van Poole and Pinkerton, Honolulu.

Dr. W. Scott Franklin, San Francisco, joined the new Matson liner, Malolo, at New York, and sailed by way of Panama to Honolulu, where he spent a short time indulging in a much needed rest.

William Evans Bruner, professor of ophthalmology in the school of medicine of Western Reserve University, has received and accepted an invitation to present a paper before the New York Academy of Medicine. He will take as his subject "The eye grounds in general diagnosis".

Dr. Robert W. Dunlap of Chefoo, Shantung, China, who is in America pending the settlement of hostilities in China, was a guest at the meeting of the Pittsburgh Ophthalmological Society on November 28. He stated that in his experience from eighty to ninety percent of eye diseases in China were trachomatous. His favorite treatment of active trachoma is the bichloride rub, 1 to 500 strength in boric acid solution.

Dr. Alfred Cowan of Philadelphia, assistant professor of ophthalmology in the graduate school of the University of Pennsylvania, has recently written a text-book on "Ophthalmic optics". The work has just been published by the F. A. Davis Company of Philadelphia, and consists of an introductory course of lectures which Dr. Cowan has been giving to the graduate students in ophthalmology.

Papers of special interest: The papers here listed have been read by members of the editorial staff and collaborators, or attention has been called to them by readers. They seem worthy of bringing to the notice of ophthalmologists in general, although some of them cannot be abstracted or reproduced to advantage. Any reader who wishes to become acquainted with all that is written on a particular topic should go over the Cumulative Index Medicus, published by the American Medical Association, and check the titles of articles that refer to the subject or subjects in which he is particularly interested. It is hoped that this brief list of important papers and monographs will be more helpful to the mass of readers than the longer lists. *E. J.*

Avizonis, P. Relation of one-sided elephantiasis of upper lid to widening of sella turcica. Zeit. f. Augenh., 1927, Nov., v. 63, p. 235.

Balado, M., and Androgue, E. Paralysis of associated movements of eyes. (bibl.) Arch. de Oft. de Buenos Aires, 1927, v. 3, p. 12.

Calhoun, F. P. Chronic progressive ophthalmoplegia externa. Southern Med. Jour., Dec., 1927, v. 20, p. 923.

Gonin, J. Operative cure of detachment of retina. Ann. d'Ocul., 1927, v. 164, p. 816.

Jourdan, H. Experimental study of effects of compression of eye. Ann. d'Ocul., 1927, v. 164, p. 855.

Mitchell, L. J. C. Teaching of ophthalmology to medical students. Med. Jour. Australia, 1927, Nov. 12, p. 363.

Paul, L. Exudative choroiditis with disciform degeneration of center of retina. Zeit. f. Augenh., 1927, Nov., v. 63, p. 405.

Roggenbau, C., and Wetthauer, A. Transparency of ocular media to long wave light. Klin. M. f. Augenh., 1927, v. 79, p. 456.

Rönne, H. Types of defects of the field of vision Jour. Amer. Med. Assn., 1927, v. 89, p. 1860